

1989
KODIAK MANAGEMENT AREA
ANNUAL HERRING MANAGEMENT REPORT

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KODIAK HERRING SAC-ROE FISHERY

Area Description

The Kodiak Management Area comprises all waters of Alaska from the southern entrance of Imuya Bay near Kilokak Rocks north to Cape Douglas, including Kodiak, Afognak, Shuyak, and adjacent islands (Figure 1).

Historical Perspective

The Kodiak Area sac-roe fishery began in 1964 and has produced an average annual harvest of 1,350 tons over this 26 year period (Table 1). Prior to 1977 the fishery was essentially unregulated as to Guideline Harvest Levels (GHL), gear types, seasons, and fishing periods. It was a relatively low value fishery with few participants, all seiners, who concentrated their effort in four or five bays on Kodiak Island's westside. Annual harvests (along with effort levels, fish abundance, prices and processor interest) fluctuated greatly during the fourteen year period between 1964 and 1977. Following the record low harvest years of the mid-1970's came the pivotal years of 1977 and 1978. In 1977, improved market conditions kindled renewed industry interest which was initially confined to a few seiners who began successfully using aircraft. By 1978, the beginnings of the contemporary sac-roe fishery were evident with a noticeably expanded seine fleet using aircraft and tenders. This effort evolved to the very mobile and efficient seine fleet which exists today. In 1978, gill net gear entered the fishery for the first time.

Since 1977, many proposed regulatory changes and several changes in management strategy have occurred as the fishery went through a rapid developmental phase. Regulatory changes during this period have dealt with gear efficiency, gear conflicts between seiners and gill netters, restrictions on gear levels (exclusive registration and limited entry), and closed water areas. The overall affect has been the emergence of a relatively stable commercial sac-roe

fishery. This is best illustrated by the data presented in Table 2.

Fishery Characteristics and Harvest Strategy

The current Kodiak sac-roe fishery occurs in numerous bays and isolated coastal locations during a seven to eight week period extending from mid-April to mid-June. The fishery opens by regulation on a specific date (currently April 15), and the entire management area is opened at this time. Roe recovery, weather conditions, and effort levels do not effect fishing periods unless it is obvious wastage may occur. Fishing periods are set by emergency order and normally extend for 24 hours beginning at 12:00 noon on odd numbered days. The 24-hour closures which begin at 12:00 noon on even numbered days are a critical management tool which allows the management staff time to assess harvest, gear concentrations, herring biomass estimates, and relocate field crews. Management Units which are not closed in-season close by regulation on June 30. Legal gear for this fishery is purse seines (100 fathoms maximum length and a maximum 1,000 meshes in depth), and gill nets (aggregate length may not exceed 150 fathoms). Limited entry has been in effect since 1981, however gear levels still fluctuate somewhat because transferable permit levels have not been finalized.

A unique characteristic of this fishery is that it commences prior to any major build-up of herring. This allows for a more general distribution of effort and conceptually a slower rate of harvest on these small stocks. Throughout the season, the entire fleet is allowed to roam independently in search of potential harvest locations. Both gill net and seine gear fish the same grounds. There are no area or time separations by the different gear types. Monitoring of pre-harvest movements of both herring schools and commercial gear is critical to management activity. Even though the annual harvest is distributed between 40-50 management units (stocks) there is a general sequence of harvest timing by groups of

these units. This allows the management staff to distribute its ground-monitoring effort into the most likely harvest locations. Frequent Alaska Department of Fish and Game (ADF&G) aerial surveillance of the entire area, supplements and actually directs in-season changes in the grounds and monitoring effort; commercial spotter reports provide invaluable information on all facets of the fishery and remain vitally important to management activities. The attached (Appendix A.1) 1989 Kodiak Sac-Roe Herring Harvest Strategy describes the current harvest strategy in detail.

This sac-roë fishery annually yields one of the higher ex-vessel values per ton in the State. Competition among shore-based processors may be a major factor combined with inherent high quality of fish. The high quality of fish is obtained from in-season handling of a relatively small quantity of fish over a long period of time.

1989 Season Summary

Effort and Harvest

During a 76 day period extending from April 15 through June 29 a total of 2,249 short tons of sac-roë herring were harvested. The average roë recovery was approximately 10% and the average ex-vessel price (delivered to the dock) was \$850 per ton for 10% recovery. The total estimated ex-vessel value of the fishery was \$1,911,000.

Oil from the Exxon Valdez spill on March 24 resulted in 34 management unit closures due to the potential contamination and subsequent waste of the herring harvested (Table 3). Twenty-six units were closed prior to any harvest occurring. Eight management units were closed after initial harvests had occurred. The combined pre-season guideline harvest level (GHL) for the 34 management units closed due to potential oil contamination was 670 tons. 152.6 tons were harvested prior to closures, leaving a GHL balance of 517.7 tons not available for harvesting.

The pre-season guideline harvest level for the entire management area was 2,415 tons. The actual harvest of 2,249 tons was less than the pre-season GHJ mainly due to management units being closed due to the potential for oil contamination prior to any harvest occurring.

Industry effort involved 37 seine permit holders and 83 gill net permit holders delivering to seven different processor/buyers. Of the total 2,249 tons harvested, seiners harvested 1,513 tons (67%) from 171 landings and gill netters harvested 763 tons (33%) from 627 landings.

The average earnings by gear type was \$34,749 per seiner and \$7,537 per gill netter.

Referring to Table 2 for comparison purposes, the trends in gear levels show an increase through 1980 and then a decrease through 1987, a period when gear expansion was either restricted or not beneficial for future Limited Entry permit considerations. The total number of permit holders making landings in 1989 increased from a low of 91 units in 1987 to 120 units. In 1989 increases in both gear types were documented; gill net permit holders accounted for the majority of the increase.

As shown in Table 4, transferrable permits for both gear types may still increase as the Limited Entry Commission continues its determinations on participants who may qualify for a transferrable permit.

The trend in overall harvest during the past eleven years has been relatively stable, averaging approximately 2,000 tons per year. Prior to 1978 the entire sac-roe harvest was taken by seine gear. Since 1979 the harvest percent taken by seine gear has ranged from a high of 84% in 1979 to a low of 60% in 1988 with 74% being the recent eleven year average. Since 1983, the gill net harvest percent has been on an increasing trend ranging from 22% in 1983 to

40% in 1988 with 26% being the recent eleven year average. The increase in gill net efficiency can be associated with the predominant weather conditions during a particular season, improved knowledge of specific stock timings, increased use of fish finding electronics, and improvements in gear and vessels.

The Fishery

In 1989 the fishery was regulated by the issuance of 34 emergency orders (E.O.'s) of which one initiated the weekly fishing periods and opening/closing times for each period. Twenty-one E.O.'s were used to close specific management units for biological reasons (herring harvested or GHL achieved); and 12 E.O.'s were used to close specific management units due to oil contamination. Table 5 provides for a more detailed summary of the E.O.'s issued during the 1989 fishery.

There are 72 management units currently described for the Kodiak Management Area. In 1989, harvests occurred in 41 of those units. A further breakdown (Table 6) shows that 35 of those units were closed in-season by E.O. Eight of the units which had initial harvests were closed in season prior to the GHL's being achieved due to potential oil contamination. Of the 31 management units in which no harvest occurred, 26 were closed due to oil contamination. The remaining five management units in which no harvest occurred were either offshore units or units which have had little, if any, historical sac-roe harvest.

In the 41 units where harvests occurred, 6 were exploited exclusively by seine gear and 6 were exploited exclusively by gill net gear. Refer to Table 6 for additional information on harvest by management unit by gear type.

With the exception of the areas closed due to oil contamination, the distribution of the herring harvest was similar to recent past years. As mentioned earlier, a guideline harvest level of 2,415 tons from "traditional" harvest areas was projected for the 1989

season. Five hundred eighteen (518) tons of the pre-season GHL was unavailable for harvesting due to units being closed because of oil contamination, leaving a "fishable" GHL of 1,897 tons. The overall harvest of 2,249 tons was 352 tons higher than the "fishable" GHL of 1,897 tons. Approximately 136 tons was harvested in management units listed as exploratory with no set GHL. The remaining 216 tons over the "fishable" GHL was harvested in major management units whose spawning biomass was better than expected.

As in years past, up to seven herring crews, outfitted with Single Side Band and Marine VHF radios, inflatable rafts, 10-15 h.p. outboards, tents, personal flotation gear, miscellaneous camping gear and survival equipment along with one ADF&G 40 foot vessel and two 20 foot aluminum skiffs, were used to monitor the major herring fisheries throughout the season. Twenty four hour closures following the twenty four hour openings, along with industry cooperation, effort and biomass surveys flown by the management staff and reports from the herring field crews were all necessary in maintaining the "small stock" management strategy currently in effect.

Subsistence/Personal Use Permits are issued to persons who want to obtain their own bait during the sac-roe season. Thirty nine permits were issued this year and two have been returned, accounting for approximately 150 pounds of herring harvested. The intent of the permit is to allow Alaska Department of Fish and Wildlife Protection officers to be able to differentiate between illegal commercial gill netting and non-commercial subsistence/personal use gill nets.

Stock Status

General

The current management strategy, which has evolved with the recent expansion (the last 10 years) of this fishery, considers each management unit as a stock. These geographic units represent relatively predictable stocks of herring relative to estimated biomass, age composition (excluding recruitment), timing, and spawning locations. The relatively small stocks associated with these units are vulnerable to excessive harvest when considering their predictability and the strategy which allows effort to initiate fishing activity within established fishing periods. Adequately regulating the annual harvest on each stock is accomplished by establishing prudent guideline harvest levels and by implementing objective in-season evaluations of stock performance and fishery performance to prevent over-harvest on each stock.

Spawning Biomass

In 1989 the spawning biomass index for that portion of the Kodiak Area fished was estimated at 9,550 tons, as determined by ADF&G surveys. The sac-roe harvest of 2,249 tons represented a total indexed exploitation rate of 19%. This compares with past years indexed exploitation rates which have ranged from .28 in 1983 to .41 in 1986.

These exploitation rates should be qualified, in that ADF&G's annual observations represent an unknown and highly variable proportion of the actual biomass. Nevertheless, these exploitation rates can be used for trend evaluation. They should not be compared to the spawning biomass indices achieved by ADF&G in Prince William Sound, Cook Inlet and the Bering Sea where each has a relatively large biomass available for aerial indexing and where that portion of the observed biomass is annually less variable, i.e. there is greater opportunity for observing a greater and more consistent proportion of the actual total biomass. Consequently, the

exploitation rates achieved in those fisheries would be more meaningful and comparable between each area's fisheries.

It has been estimated by both staff and commercial spotter pilots, that as little as one-quarter to one-half of the actual biomass is observed for Kodiak Area stocks. This is a result of the relatively low biomass levels of these stocks, the numerous small schools associated with each stock, the long duration of time over which the entire spawning biomass for each stock disperses its spawning effort, and the amount of dedicated aerial effort expended by both ADF&G and commercial spotters during the duration of spawning period which extends from approximately early April to early August.

Based on age, weight, and length (AWL) samples of the commercial harvest, age 5 and 6 year old herring accounted for 62% of the commercial harvest (Table 7). Age 3 herring, or recruit herring, accounted for 7.3% of the commercial harvest. Considering the good recruitment seen in 1989 (Tables 8, 9, and 10), combined with record levels of age 1 and 2 year old juvenile herring observed this year (1989), the Kodiak Area biomass, in general, appears to be on a healthy trend.

Age composition, aerial biomass estimates, stock and fishery performance are all indicators that the Kodiak Area biomass should continue to support a stable sac-roe fishery during the upcoming years.

1990 Management Plans and Issues

Pending Alaska State Board of Fish action on proposed regulation changes, the 1990 sac-roe management plan is expected to be similar to those plans in effect since 1982.

The guideline harvest levels for the various stocks will reflect stock status. Based on the healthy trends in both stock and

fishery performance the 1990 GHF will approximate 2,100 tons. The final figure will be available when the 1990 Management Plan is finalized and distributed in March.

The actual harvest strategy which includes both gear types being able to fish the entire management area at the same time during 24 hour openings followed by 24 hour closures has been in effect since 1981 may need to be modified depending on Board action on proposed regulation changes to separate gear and increase the length of purse seines.

Additional issues which will continue to affect the fishery are continued budget support for field crews and equipment, the eventual disposition of permanent transferrable limited entry permits, the degree of in-season cooperation between ADF&G and processors, fishermen and spotter pilots.

A new regulation passed by the Board in 1988 which prohibits the possession of herring which number more than 250 fish per 50 lb sample will likely be tested beginning in 1990 considering the high levels of juvenile herring observed in 1989.

Temporary effort increases imposed on the Kodiak Area by seine combines which are geared for the much larger sac-roe fisheries in Prince William Sound, Cook Inlet, and Bristol Bay may also affect in-season management.

The 1990 Kodiak sac-roe fishery will also be the first "test" of the management area's waters as to continuing (if any) oil contamination resulting from the 1989 Exxon Valdez oil spill, effects on in-shore net fisheries.

KODIAK HERRING FOOD/BAIT FISHERY

Historical Perspective

Historically the Kodiak food/bait fishery was one of the State's major fisheries. It was primarily a reduction fishery during its peak production years and yielded tonnages which dwarf current food/bait production. During a seventeen year period (1934-1950), an average harvest of approximately 31,600 tons was sustained (Table 11). The primary product was fish meal, which required the relatively large quantities of fish which apparently were available, and the secondary use was salted food and bait products. The current fishery is primarily a bait fishery, providing a frozen product for local longline and crab fleets.

Historical effort involved large "sardine-seiner" type vessels, used in conjunction with "holding pounds" for the reduction fishery and local small seiners, and to a lesser extent gill nets, for a portion of the food fishery.

Fishery Characteristics

The current Kodiak Area herring food/bait fishery can be characterized as being a secondary commercial fishery on herring concentrations located in Kodiak waters. Effort and yield levels are at historical lows for the food/bait fishery whereas the sac-ro-e fishery supports near record levels of effort and yield. The food/bait fishery is an open-to-entry fishery, while the sac-ro-e fishery has been limited-to-entry since 1981. Existing regulations designate priority status to the sac-ro-e fishery, in that regulatory harvest strategy allocates a very major percentage of the allowable harvest on local stocks to the sac-ro-e fishery.

The herring food/bait season by regulation extends from August 1 through February 28. The entire area is open to continuous fishing

on August 1. Legal gear for this fishery are, seines, gill nets, and trawls. There are no exclusive gear areas and the only gear restrictions are for maximum purse seine and gill net length, 100 fathoms and 150 fathoms, respectively and maximum depth of 1,000 meshes for purse seines. All permit holders are required to register at the Kodiak ADF&G office prior to fishing, and at that time, management plans are issued and catch-reporting procedures and current regulations are reviewed. Each landing is sampled (AWL) and extensive skipper interviews are conducted to evaluate which sac-roe stocks are being impacted.

For local Kodiak stocks which are exploited during the sac-roe fishery, the food/bait herring G.H.L. on those same stocks is 10% of the previous season's sac-roe harvest.

There are major concentrations of non-local stocks which over-winter in east Shelikof Strait adjacent to the westside of Kodiak and Afognak Islands. In 1986 a stock identification study using scale pattern analysis was performed on the above mentioned non-local stocks (Johnson 1988). The study concluded that at least 80% of the East Shelikof herring were of Kamishak spawning stock origin.

In March 1988, the Alaska State Board of Fish allocated two percent of the previous season's total available spawning biomass from Kamishak for harvesting during Kodiak's food/bait herring fishery.

Harvest Strategy

The attached (Appendix B.1) 1989/90 Kodiak Food/Bait Fishery Management Plan describes the current harvest strategy in detail.

The targeted food and bait fishery on Kamishak spawning stocks over-wintering in Shelikof Strait is limited to harvesting no more than two percent of the previous season's total available spawning biomass in Kamishak.

In order to make the actual harvest tonnage reflect only those fish which comprise the spawning biomass the following adjustments are made: All food/bait herring landings from the targeted fishery on Kamishak stocks in Shelikof Strait are sampled. All age 4 and younger herring are converted to age 5 herring by weight by landing. This is done in an attempt to relate the actual food/bait harvest on Kamishak stocks to the GHL allocation which is based on spawning biomass only and not juveniles. Age 4 herring were selected because in the Kamishak spawning stocks, herring generally are not considered to be part of the spawning biomass until they reach age 4 with complete recruitment into the spawning biomass by age 5.

1989/90 Season Summary

Effort and Harvest

A total of 344.6 tons of herring were harvested, of which 278.4 tons are considered Kamishak spawning stocks and the remaining 66.2 tons Kodiak spawning stocks. Three hundred four tons is the "adjusted" harvest total (converting age 4 and younger weights to age 5 weights) from the Kamishak food/bait harvest of 278.4 tons. All herring processed was utilized for bait purposes due to possible oil contamination from the Exxon Valdez spill on March 24, 1989.

Seven vessels (3 seine, 4 trawl) and eight buyer/processors registered to participate in this fishery. One hundred percent of the harvest was taken by trawl gear.

The Fishery

As mentioned in the attached Food/Bait Fishery Harvest Strategy, 512 tons of herring were available for harvesting in the Shelikof Strait fishery which targets Kamishak spawning stocks over wintering in Shelikof Strait. An additional 278 tons was available from the remainder of the Kodiak Management Area's local spawning stocks.

Kodiak's food/bait herring fishery ran from August 1 through February 28. A majority of the herring were harvested between mid November and mid December. Four emergency orders (E.O.'s) were issued in season, three of which closed individual management units and one which closed the entire Uganik food/bait management unit (Statistical Area F/B 4).

Herring samples were collected from each commercial harvest area for age, weight length (AWL) analysis (Table 12).

The state research vessel Resolution completed two (5 days each) survey trips between December 4-7, and January 11-15. Acoustical surveys were completed on both surveys, along with collection of samples with the vessel's test trawl (Table 13). Concentrations of herring were located in Kupreanof Strait and Raspberry Strait during the December 4-7 trip and in Raspberry Strait during the January 11-15 survey. Reliable biomass estimates from the acoustical tapes recorded on the surveys have not been attainable. Estimates of the geographic area covered by one of the larger concentrations of herring was 0.1 mile - 0.2 mile in width to 0.9 - 1.0 mile long with the depth of the herring school averaging 10 fathoms deep.

1990/91 Management Plans and Issues

The main issue for the 1990-/91 season will be whether there will be a season, pending Board of Fisheries action on two proposals to eliminate the food/bait herring fishery and allow for only sac-roë harvests to occur on Kodiak and Kamishak stocks.

LITERATURE CITED

Johnson, B.A and C. Burkey, and D. Gaudet. (Draft manuscript 1988). Stock identification of Pacific herring in the bait fishery in Shelikof Strait, Alaska, 1985/86. Alaska Department of Fish and Game, Division of Commercial Fisheries. Juneau.

Table 1. Historical harvest and effort level for the herring sac-roë fishery for the Kodiak Management Area, 1964-1989.

YEAR	TONS HARVESTED	SEINE	GILL NET	BUYER'S	NUMBER OF VESSELS			
					TRAWLS	GILL NET	SEINE	TOTAL
1964	567.8	567.8	-	2	0	0	5	5
1965	657.2	657.2	-	2	0	0	8	8
1966	2,769.3	2,769.3	-	4	0	0	11	11
1967	1,662.4	1,662.4	-	4	0	0	5	5
1968	2,000.6	2,000.6	-	4	0	0	10	10
1969	1,130.0	1,130.0	-	9	0	0	21	21
1970	341.6	341.6	-	5	0	0	13	13
1971	284.3	284.3	-	2	0	0	4	4
1972	215.0	215.0	-	1	0	0	4	4
1973	831.0	831.0	-	4	0	0	11	11
1974	868.0	868.0	-	4	0	0	26	26
1975	8.0	8.0	-	3	0	0	2	2
1976	4.6	4.6	-	1	0	0	1	1
1977	338.4	338.4	-	3	0	0	11	11
1978	903.6	880.6	23.0	7	2	7	28	35
1979	1,735.1	1,457.2	277.9	8	0	125	57	182
1980	2,383.0	2,009.0	374.0	9	1	109	92	201
1981	2,065.4	1,596.2	469.2	9	0	114	79	193
1982	1,770.6	1,447.0	323.6	6	0	67	45	112
1983	2,318.5	1,796.9	521.6	7	0	64	41	105
1984	2,162.7	1,691.2	471.5	7	0	69	39	108
1985	1,967.7	1,244.2	723.5	7	0	81	34	115
1986	1,558.4	1,110.8	447.6	8	0	71	31	102
1987	2,145.9	1,591.3	554.6	8	0	62	29	91
1988	2,171.0	1,303.5	867.5	6	0	76	33	109
1989	2,248.6	1,512.6	736.0	6	0	83	37	120
<hr/>								
TOTALS	35,108.7	29,318.7	5,790.0					
AVERAGE	1,350.3	1,127.6	482.5					

Table 2. Kodiak herring sac-roe fishery summary by year and by gear, 1979-1989.

YEAR	SEASON LENGTH (DAYS)	TOTAL HARVEST	BY GEAR		PERCENT		LANDINGS		NO. UNITS		AVG. \$'S	
			SEINE	G/N	SEINE	G/N	SEINE	G/N	SEINE	G/N	SEINE	G/N
1979	36	1,735	1,457	278	84	16	-	-	57	125	38,347	3,333
1980	35	2,383	2,009	374	84	16	-	-	92	109	14,978	2,573
1981	48	2,065	1,596	469	77	23	207	406	79	114	14,402	3,471
1982	59	1,771	1,447	324	82	18	138	191	45	67	17,819	2,719
1983	51	2,319	1,797	522	78	22	164	284	41	64	35,061	6,520
1984	54	2,163	1,691	472	78	22	138	212	39	69	34,691	5,467
1985	59	1,968	1,244	724	63	37	118	348	34	81	32,935	8,039
1986	61	1,558	1,110	448	71	29	132	385	31	71	34,010	6,002
1987	61	2,146	1,591	554	74	26	122	411	29	62	54,872	8,945
1988	59	2,171	1,304	867	60	40	169	555	33	76	51,350	14,837
1989	76	2,249	1,513	736	67	33	171	627	37	83	34,749	7,537
11 YEAR AVG.	55	2,048	1,524	524	74	26	151	380	47	84	29,313	5,639

Table 3. Kodiak herring sac-rope fishery chronological summary of oil related management unit closures for the Kodiak Management Area, as of July 26, 1989.

E.O. No.	Management Units (Sections)	Stat. Area	G.H.L.	1989 Tonnage		Closures	
				Harvested	Unharvested ^a	Announced	Effective
#1	Kitoi Bay (portion)	A091	15	0	15.0	4:00 P.M. 4/13	12:00 A.M. 4/15
#2	Shuyak Island	A060	20	0	20.0	10:30 A.M. 4/15	6:30 P.M. 4/15
	Perenosa Bay	A070	15	0	15.0		
	Delphin Bay	A071	10	0	10.0		
	Seal Bay	A072	10	0	10.0		
	Tonki Bay	A080	15	0	15.0		
#8	North Mainland	M010	Exp.	0	Exp.	3:00 P.M. 4/27	6:30 P.M. 4/27
	Inner Kukak	M020	50	0	50.0		
	Outer Kukak	M030	b	0	b		
#10	Missak	M040	Exp.	0	Exp.	12:00 A.M. 4/30	12:00 A.M. 4/30
	Inner Katmai	M050	50	0	50.0		
	Outer Katmai	M060	b	0	b		
	Alinchak	M070	30	0	30.0		
	Puale Bay	M080	Exp.	0	Exp.		
	Portage Bay	M090	Exp.	0	Exp.		
	Outer Portage Bay	M100	b	b	b		
	Wide Bay	M110	100	0	100.0		
	Lower Shelikof	M120	Exp.	0	Exp.		
#16	Harvester Island	UY20	10	0	10.0	7:00 A.M. 5/7	12:00 A.M. 5/7
#19	Blue Fox	A040	10	0	10.0	8:00 A.M. 5/11	12:00 A.M. 5/11
#20	Raspberry Straits	A010	55	22.0	33.0	6:00 P.M. 5/11	6:30 P.M. 5/11

-Continued-

Table 3. (page 2 of 2)

E.O. No.	Management Units (Sections)	Stat. Area	G.H.L.	1989 Tonnage		Closures	
				Harvested	Unharvested ^a	Announced	Effective
#22	Spiridon	UY50	160	100.6	59.4	5:00 P.M. 5/12	12:00 A.M. 5/12
#23	Kupreanof Straits	UG10	10	0	10.0	4:30 P.M. 5/15	6:30 P.M. 5/15
#31	McDonalds Lagoon	A092	10	10.3	0	12:00 Noon 6/4	12:00 A.M. 6/4
#32	Litnik	A101	15	2.4	12.6	12:00 Noon 6/16	12:00 Noon 6/16
	Inner Kiliuda Bay	G041	10	5.3	4.7		
	Outer Kiliuda Bay	G040	b	0	b		
	Outer Ugak Bay	G050	b	0	b		
	Inshore Marmot	A102	10	2.7	7.3		
	Spruce Island	G103	10	0	10.0		
	Inshore Chiniak	G102	10	0	10.0		
#34	Middle Bay	G101	25	3.7	21.3	4:00 P.M. 6/19	6:30 P.M. 6/19
	Kalsin Bay	G100	20	5.6	14.4		
	Monashka Bay	G070	Exp.	0	Exp.		
12 E.O.'s	34 Management Units		670	152.6	517.7		

^a Unharvested balance of G.H.L. unavailable for harvest because of oil-related closures. This does not necessarily reflect the total tonnage which could have potentially been harvested.

^b Offshore management units not expected to yield herring of sac-roe quality. In the unlikely event herring are harvested in these management units, an exploratory harvest strategy applies.

Table 4. Status of Kodiak sac-roe herring permits,
1989.

	Year		
	1987	1988	1989
Gill Net Transferable	59	63	64
Gill Net Non-transferable	48	41	41
Gill Net Total	<u>107</u>	<u>104</u>	<u>105</u>
Gill Net Fished	62	76	83
Seine Trasferable	40	45	45
Seine Non-transferable	26	24	24
Seine Total	<u>66</u>	<u>69</u>	<u>69</u>
Seine Fished	29	33	37
TOTALS			
Transferable	99	108	109
Non-transferable	74	65	65
Total	<u>173</u>	<u>173</u>	<u>174</u>
Fished	91	109	120

Table 5. Herring sac-roe fishery summary of emergency orders issued for the Kodiak Management Area, 1989.

Emergency Order No.	Time/Date		Action Taken
	Issued	Effective	
1	4:00 P.M. 4/13/89	12:00 A.M. 4/15/89	<p>Identified fishing periods for 1989 season. Also identified biological closures:</p> <ul style="list-style-type: none"> - All lagoons on Uganik Island - Inside a line from Shannon's Point to the southern tip of Nyman's Peninsula in Women's Bay. - Brown's Lagoon <p>Also identified closures due to presence of oil contaminant booms:</p> <ul style="list-style-type: none"> - Kitoi Bay Section (A090), that portion west of 152°20' W. long. - Perenosa Bay Section (A070), that portion east of 152°21' W. long (Paul's Bay) and south of 58°20'36" N. lat. (Discoverer Bay)
2	10:30 P.M. 4/15/89	6:30 P.M. 4/15/89	<p>Closure due to close proximity of oil contaminated waters to fishing grounds of the:</p> <ul style="list-style-type: none"> - Shuyak Island Section (A060) - Perenosa Bay Section (A070) - Delphin Bay Section (A071) - Seal Bay Section (A072) - Tonki Bay Section (A080)
3	2:45 P.M. 4/19/89	3:00 PM. 4/19/89	<p>Closure due to in-season harvest of a portion of the:</p> <ul style="list-style-type: none"> - E. Sitkalidak Section (G022) West of 153°16'24" W. long.
4	9:30 P.M. 4/19/89	10:00 P.M. 4/19/89	<p>Closure due to in-season harvest of a portion of the:</p> <ul style="list-style-type: none"> - W. Sitkalidak Section (G020) in Sitkalidak Straits north of latitude of Cape Liakik at 57°07' N. Lat.
5	5:30 A.M. 4/22/89	6:45 A.M. 4/22/89	<p>Closure due to in-season harvest in the:</p> <ul style="list-style-type: none"> - Izhut Bay Section (A090)
6	4:26 P.M. 4/23/89	5:00 P.M. 4/22/89	<p>Closure due to in-season harvest in the:</p> <ul style="list-style-type: none"> - Taniginak Anchorage Section (A023)
7	9:45 A.M. 4/24/89	10:15 A.M. 4/24/89	<p>Closure due to in-season harvest in the:</p> <ul style="list-style-type: none"> - Malina Bay Section (A020)
8	3:00 P.M. 4/27/89	6:30 P.M. 4/27/89	<p>Closure due to close proximity of oil contaminated water to fishing grounds of the:</p> <ul style="list-style-type: none"> - North Mainland Section (M010) - Inner Kukak Section (M020) - Outer Kukak Section (M030)

-Continued-

Table 5. (page 2 of 4)

Emergency Order No.	Time/Date		Action Taken
	Issued	Effective	
9	8:30 P.M. 4/27/89	9:00 P.M. 4/27/89	Closure due to in-season harvest in the remaining portion of: - E. Sitkalidak Section (G022) east of 153°16'24" W. long.
10	12:00 A.M. 4/30/89	12:00 A.M. 4/30/89	Closure due to close proximity of oil contaminated waters to fishing grounds of the: - Remainder of the Mainland District.
11	11:05 P.M. 5/1/89	11:45 P.M. 5/1/89	Closure due to in-season harvest in the: - South Arm Uganik Section (UG34)
12	4:00 P.M. 5/2/89	12:00 A.M. 5/2/89	Closure due to in-season harvest in a portion of the: - Outer Ugak Section (G050) in Pasagshak Bay north of 57°26'06" N. lat.
13	10:10 P.M. 5/3/89	10:30 P.M. 5/3/89	Closure due to in-season harvest in the: - Village Island Section (UG30)
	10:10 P.M. 5/3/89	10:35 P.M. 5/3/89	Closure due to in-season harvest in the: - Shearwater Bay Section (G042)
14	12:00 A.M. 5/4/89	12:00 A.M. 5/4/89	Closure due to in-season harvest in the: - West Uganik Pass Section (UG31)
15	12:00 A.M. 5/6/89	12:00 A.M. 5/6/89	Closure due to in-season harvest in the: - East Arm Uganik Section (UG33)
16	7:00 A.M. 5/7/89	12:00 A.M. 5/6/89	Closure due to close proximity of oil contaminated waters to fishing grounds of the: - Harvester Island Section (UY20)
17	6:00 P.M. 5/7/89	6:30 P.M. 5/7/89	Closure due to in-season harvest in the: - Danger Bay Section (A100) - Kizhuyak Bay Section (G090) - Paramanof Bay Section (A031) - Foul Bay Section (A032)
18	4:00 P.M. 5/10/89	12:00 A.M. 5/10/89	Closure due to in-season harvest in the: - Kaiugnak Bay Section (G0010) that portion east of a line from Cape Kasiak to Cape Kiavak.
19	8:00 A.M. 5/11/89	12:00 A.M. 5/10/89	Closure due to close proximity of oil contaminated waters to fishing grounds of the: - Blue Fox Section (A040)

-Continued-

Table 5. (page 3 of 4)

Emergency Order No.	Time/Date		Action Taken
	Issued	Effective	
20	6:00 P.M. 5/11/89	6:30 P.M. 5/11/89	Closure due to close proximity of oil contaminated waters to fishing grounds of the: - Raspberry Straits Section (A010)
21	12:00 A.M. 5/12/89	12:00 A.M. 5/12/89	Closure due to in-season harvest in the: - Brown's Lagoon Section
22	5:00 P.M. 5/12/89	12:00 P.M. 5/12/89	Closure due to close proximity of oil contaminated water to fishing grounds of the: - Spiridon Bay Section (UY50)
23	4:30 P.M. 5/15/89	6:30 P.M. 5/15/89	Closure due to close proximity of oil contaminated water to fishing grounds of the: - Kupreanof Straits Section (UG10)
24	11:00 A.M. 5/20/89	10:00 P.M. 5/19/89	Closure due to in-season harvest in the: - Zachar Bay Section (UY40)
	11:00 A.M. 5/20/89	8:45 A.M. 5/20/89	Closed due to in-season harvest in the: - Viakoda Bay Section (UG20)
	11:00 A.M. 5/20	12:00 A.M. 5/20/89	Closed due to in-season harvest in the: - Barling Bay Section (G021)
25	5:00 P.M. 5/22/89	12:00 A.M. 5/22/89	Closed due to in-season harvest in the: - Inner Ugak Section (G051)
26	5:00 P.M. 5/24/89	12:00 A.M. 5/24/89	Closure due to in-season harvest in the: - Women's Bay Section (G060)
27	6:00 P.M. 5/24/89	8:45 A.M. 5/24/89	Closure due to in-season harvest in the: - Sulua/Portage Bay Section (AL30)
28	4:00 P.M. 5/25/89	6:30 P.M. 5/25/89	Closure due to in-season harvest in the: - Terror Bay Section (UG21)
29	3:30 P.M. 5/29/89	6:30 P.M. 5/29/89	Closure due to in-season harvest in the: - Inner Uyak Bay Section (UY30)
30	8:00 A.M. 5/30/89	9:45 P.M. 5/29/89	Closure due to in-season harvest in the: - Deadman Bay Section (AL21)
31	12:00 A.M. 6/4/89	12:00 A.M. 6/4/89	Closure due to close proximity of oil contaminated water to fishing grounds of the: - MacDonald's Lagoon Section (A092)

-Continued-

Table 5. (page 4 of 4)

Emergency Order No.	Time/Date		Action Taken
	Issued	Effective	
32	12:00 A.M. 6/16/89	12:00 A.M. 6/16/89	<p>Closure due to close proximity of oil contaminated waters to fishing grounds of the:</p> <ul style="list-style-type: none"> - Litnik Section (A101) - Inner Kiliuda Bay Section (G041) - Outer Kiliuda Bay Section (G041) - Outer Ugak Section (G050) - Inshore Marmot Section (A102) - Spruce Island Section (G103) - Inshore Chinlak Section (G102)
33			Salmon E.O.
34	4:00 P.M. 6/19/89	6:30 P.M. 6/19/89	<p>Closed due to in-season harvest in the:</p> <ul style="list-style-type: none"> - Northeast Arm Uganik Section (UG32) <p>Closure due to close proximity of oil contaminated water to fishing grounds of the:</p> <ul style="list-style-type: none"> - Middle Bay Section (G101) - Kalsin Bay Section (G100) - Monashka Bay Section (G070)

Table 6. Herring sac-roë fishery harvest summary by gear and area for the Kodiak Management Area, 1989.

STAT. AREA	MGMT. UNITS	1989 GUIDELINE HARVEST LEVEL	PURSE SEINE	%	GILL NET	%	TOTAL	DATE CLOSED
AFOGNAK DIST.								
A010	Raspberry Sts.	55	15.2	69	6.8	31	22.0	5/11-OR*
A020	Malina Bay	30	16.0	36	28.1	64	44.1	4/24
A031	Paramanof Bay	40	27.0	70	11.5	30	38.5	5/7
A032	Foul Bay	30	0	0	25.2	100	25.2	5/7
A040	Devils Inlet	10	0	-	0	-	0	5/10-OR*
A040	Blue Fox	10	0	-	0	-	0	5/10-OR*
A050	Offshore W. Afog. ^a	-	0	-	0	-	0	6/30
A060	Shuyak Is.	20	0	-	0	-	0	4/15-OR*
A070	Perenos Bay	15	0	-	0	-	0	4/15-OR*
A071	Delphin Bay	10	0	-	0	-	0	4/15-OR*
A072	Seal Bay	10	0	-	0	-	0	4/15-OR*
A080	Tonki Bay	15	0	-	0	-	0	4/15-OR*
A090	Izhut Bay	25	53.1	87	7.8	13	60.9	4/22
A091	Kitoi Bay	15	0	-	0	-	0	4/15-OR*
A092	MacDonalds Lagoon	10	2.8	26	7.9	74	10.2	6/4-OR*
A100	Danger Bay	30	14.8	47	16.4	53	31.2	5/7
A101	Litnik	15	0.6	25	1.8	75	2.4	6/16-OR*
A102	Duck Bay	10	0	-	2.7	100	2.7	6/16-OR*
District Totals		17	350	55	108.2	45	237.7	

-Continued-

Table 6. (page 2 of 6)

STAT. AREA	MGMT. UNITS	1989 GUIDELINE HARVEST LEVEL	PURSE SEINE	% GILL NET	%	TOTAL	DATE CLOSED
UYAK DISTRICT							
UY10	Offshore Uyak ^a	-	0	-	0	-	0 6/30
UY20	Harvester Island	10	0	-	0	-	0 5/6-OR*
UY30	Inner Uyak	240	154.2	57	116.6	43	270.8 5/29
UY30	Browns Lagoon	20	9.0	47	10.0	53	19.0 5/12
UY31	Larsen Bay	10	0	-	4.2	100	4.2 6/30
UY40	Zachar Bay	100	81.8	61	51.7	39	133.5 5/19
UY50	Spiridon Bay	160	83.9	83	6.7	17	100.65 5/12-OR*
District Totals		6	540	62	199.2	38	528.1
UGANIK DIST.							
UG10	Kupreanof	10	0	-	0%	-	0 5/15-OR*
UG20	Viekoda	30	25.7	82	5.6	18	31.3 5/20
UG21	Terror	80	32.4	42	44.2	58	76.6 5/25
UG21	Uganik Is. Lagoon ^b	0	0	-	0	-	0 4/15
UG30	Village Island	30	27.7	79	7.5	21	35.2 5/3
UG31	W. Uganik Pass	15	20.5	100	0	-	20.5 5/4
UG32	NE Arm Uganik	75	71.3	89	9.0	11	80.3 6/19
UG33	E. Arm Uganik	40	10.5	25	31.3	75	41.8 5/6

-Continued-

Table 6. (page 3 of 6)

STAT. AREA	MGMT. UNITS	1989 GUIDELINE HARVEST LEVEL	PURSE SEINE	%	GILL NET	%	TOTAL	DATE CLOSED
UG34	S. Arm Uganik	40	49.8	92	4.4	8	54.2	5/1
UG40	Offshore Uganik ^a	-	0	-	0	-	0	-
District Totals		9	320	237.9	70	102.0	30	339.9
ALITAK DIST.								
AL10	Outer Alitak	Explor.	0	-	0	-	0	6/30
AL20	Inner Alitak	Explor.	0	-	0	-	0	6/30
AL21	Deadman Bay	125	135.7	88	18.6	12	154.3	5/29
AL30	Sulua/Portage Bay	60	60.5	76	19.6	24	80.1	5/24
AL40	Lower Olga/Moser	15	0	0	5.2	100	5.2	6/30
AL40	N. Upper Olga B.	10	0	-	0	-	0	6/30
AL50	Upper Olga Bay	190	169.1	81	40.3	19	209.4	6/30
AL60	Geese/Twoheaded	Explor.	6.9	89	.9	11	7.8	6/30
District Totals		8	400	372.2	82	84.6	.6	18
STURGEON/HALIBUT DIST.								
SH10	Sturgeon/Halibut	Explor.	0	-	0	-	0	-

-Continued-

Table 6. (page 4 of 6)

STAT. AREA	MGMT. UNITS	1989 GUIDELINE HARVEST LEVEL	PURSE SEINE	%	GILL NET	%	TOTAL	DATE CLOSED
GENERAL DISTRICT								
GO10	Kaiugnak	10	13.3	100	0	-	13.3	Part 5/10
GO20	W. Sitkalidak St.	Explor.	113.7	86	14.8	14	128.5	Part 4/19
GO21	Barling	20	0	-	17.3	100	17.3	5/20
GO22	E. Sitkalidak St.	95	97.9	69	43.2	31	141.1	4/19-22
GO23	Tanginak Anchorage	15	18.3	63	11.0	37	29.3	4/23
GO30	Outer Sitkalidak	Explor.	0	-	0	-	0	6/30
GO40	Outer Kiliuda	Explor.	0	-	0	-	0	6/16-OR*
GO41	Inner Kiliuda	10	3.7	70	1.6	30	5.3	6/6-OR*
GO42	Shearwater	25	19.8	100	0	-	19.8	5/3
GO50	Pasagshak	25	29.4	100	0	-	29.4	5/2
GO50	Outer Ugak	Explor.	0	-	0	-	0	6/16-OR*
GO51	Inner Ugak	50	45.2	83	9.6	17	54.8	5/22
GO60	Womens Bay	110	81.7	75	26.9	25	108.6	5/24
GO70	Monashka/ Mill Bay	Explor.	0	-	0	-	0	6/19-OR*
GO80	Anton Larsen	30	2.9	24	10.6	76	13.5	6/30
GO81	Sheratin	10	3.6	100	0	-	3.6	6/30
GO90	Kizhuyak	110	12.4	11	99.9	89	112.3	5/7
G100	Kalsin Bay	20	2.2	39	3.4	61	5.6	6/19-OR*
G101	Middle Bay	25	0	-	3.7	100	3.7	6/19-OR*

-Continued-

Table 6. (page 5 of 6)

STAT. AREA	MGMT. UNITS	1989 GUIDELINE HARVEST LEVEL	PURSE SEINE	%	GILL NET	%	TOTAL	DATE CLOSED
G102	Inshore Chiniak	10	0	-	0	-	0	6/19-OR*
G103	Spruce Island	10	0	-	0	-	0	6/19-OR*
District Total		21	575	444.1	65	242.0	35	686.1
MAINLAND DIST.								
M010	North Mainland	Explor.	0	-	0	-	0	4/27-OR*
M020	Inner Kukak	50	0	-	0	-	0	4/27-OR*
M030	Outer Kukak ^a	-	0	-	0	-	0	4/27-OR*
M040	Inner Missak	Explor.	0	-	0	-	0	4/30-OR*
M040	Outer Missak ^a	-	0	-	0	-	0	4/30-OR*
M050	Inner Katmai	50	0	-	0	-	0	4/30-OR*
M060	Outer Katmai ^a	-	0	-	0	-	0	4/30-OR*
M070	Alinchak	30	0	-	0	-	0	4/30-OR*
M080	Puale Bay	Explor.	0	-	0	-	0	4/30-OR*
M090	Portage Bay	Explor.	0	-	0	-	0	4/30-OR*
M100	Outer Portage ^a	-	0	-	0	-	0	4/30-OR*

-Continued-

Table 6. (page 6 of 6)

STAT. MGMT.		1989 GUIDELINE	PURSE					DATE
AREA	UNITS	HARVEST LEVEL	SEINE	%	GILL NET	%	TOTAL	CLOSED
M110	Wide Bay	100	0	-	0	-	0	4/30-OR*
M120	Lower Shelikof	Explor.	0	-	0	-	0	4/30-OR*
District Total		230	0		0		0	
GRAND TOTAL		2,415	1,512.6	67	736.0	33	2,248.6	

*OR = Oil Related
Explor. = Exploration

^a These are offshore management units which are not expected to yield herring of sac-roe quality. These units are more applicable to the food/bait fishery. (See Herring Food/Bait Fishery Management Plan.)

^b The spawning biomass has probably been reduced to less than 50 tons and the unit is closed to fishing.

Table 7. Summary of age, weight, and length data for the Kodiak Management Area, combined, 1989.

	AGE										
	2	3	4	5	6	7	8	9	10	11+	TOTAL [±]
N	9	213	186	1261	546	28	280	125	231	34	2913
% BY AGE	.3	7.3	6.4	43.3	18.7	1.0	9.6	4.3	7.9	1.2	100%
N	9	213	186	1261	546	28	280	125	231	34	2913
AVG. LENGTH (mm)	168	185	210	227	246	255	259	259	259	263	234
N	9	170	159	1088	455	28	239	115	217	30	2510
AVG. WEIGHT (GMS)	60	85	130	176	223	252	269	271	275	283	199

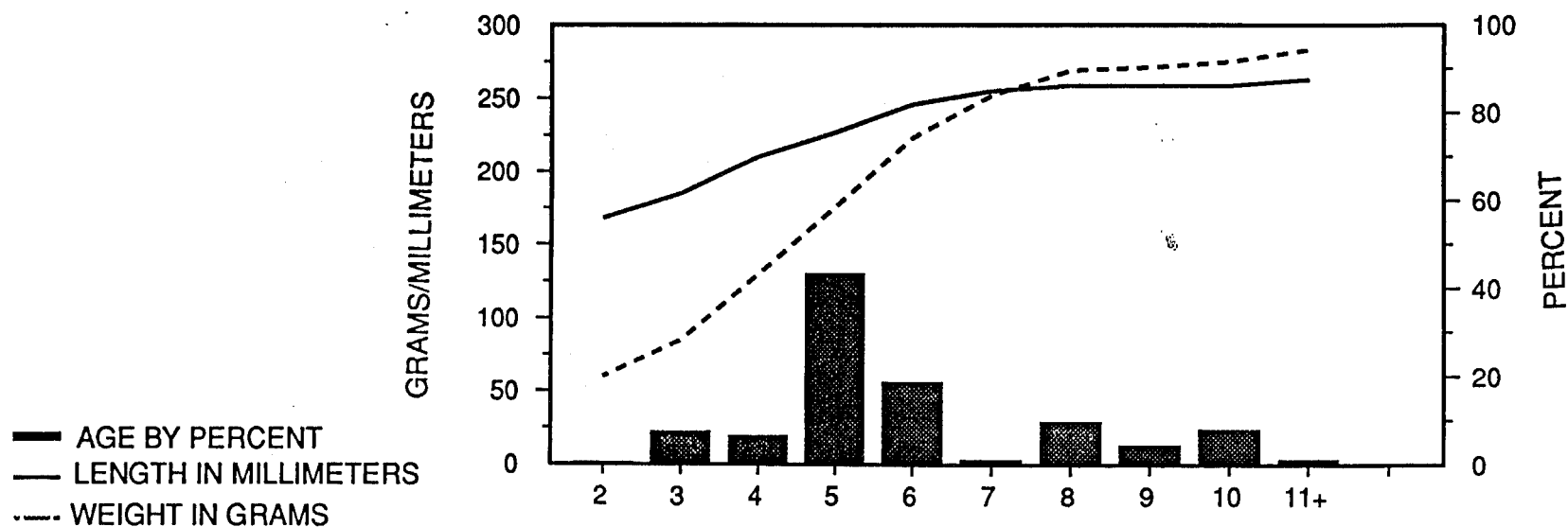


Table 8. Summary of age composition by percent of herring sac-roe stocks in the Kodiak Management Area, 1989.

STOCK NAME	GEAR TYPE ^a	SAMPLE DATE	AGE COMPOSITION (%)										N
			2	3	4	5	6	7	8	9	10	11+	
Malina Bay	1	4/23	.7	44.4	14.9	38.4	1.5	-	-	-	-	-	268
Izhut Bay	1	4/18-4/22	-	-	3.7	56.0	23.9	3.0	6.0	3.0	1.5	3.0	134
Danger Bay	2	5/4	-	-	1.8	18.2	36.4	3.6	30.9	1.8	5.5	1.8	55
Viekoda Bay	1	5/12-5/18	-	1.8	.9	10.6	32.7	1.8	19.5	9.7	22.1	.9	113
Terror Bay	1	5/3	-	1.5	11.4	75.8	6.8	.8	2.3	-	1.5	-	132
Village Island	1	5/3	-	-	5.4	54.1	29.7	-	2.7	5.4	2.7	-	37
W. Uganik Passage	1	5/4	-	3.1	14.1	40.6	23.4	1.6	3.1	6.3	7.8	-	64
S. Arm Uganik	1	5/1-5/2	-	1.5	9.6	77.7	8.8	.4	-	1.2	.4	.4	260
Zachar Bay	1	5/11	-	2.2	10.3	55.9	9.6	-	1.5	3.7	16.9	-	136
Inner Uyak Bay	1	5/7-5/25	.3	.3	7.9	39.8	14.1	.8	2.0	8.5	25.1	1.1	354
Deadman Bay	1	5/29	-	1.3	.6	16.7	54.5	-	21.2	1.3	4.5	-	156
Sulua Bay	1	5/20-5/24	-	1.6	.8	20.5	52.8	.8	12.6	-	7.9	3.1	127
Olga Bay	1	6/24	1.5	47.8	13.4	20.9	4.5	-	3.0	3.0	4.5	1.5	134
W. Sitkalidak Strts.	1	4/19-4/29	.3	-	1.3	63.5	14.0	.3	9.4	5.5	4.2	1.3	307
Barling Bay	2	5/10	-	-	3.3	28.3	31.7	1.7	13.3	3.3	18.3	-	60
E. Sitkalidak Strts.	1	4/19-4/27	-	.7	3.0	42.5	18.7	-	12.7	6.7	12.7	3.0	134
Tanginak Anchorage	1	4/22-4/23	-	-	-	39.3	19.6	.9	16.1	13.4	8.0	2.7	112
Inner Kiliuda Bay	1	5/8	-	2.9	5.8	33.3	30.4	1.4	11.6	1.4	11.6	1.4	69
Shearwater Bay	1	5/1-5/3	-	-	5.3	22.8	47.4	1.8	7.0	7.0	3.5	5.3	57
Pasagshak Bay	1	4/26-5/1	.8	1.6	.8	22.7	28.9	3.1	23.4	8.6	9.4	.8	128
Women's Bay	1	5/2-5/24	.7	2.2	4.4	20.4	5.8	2.2	53.3	5.8	4.4	.7	137
Sheratin Bay	1	5/22	1.9	11.5	5.8	42.3	17.3	5.8	-	5.8	7.7	1.9	52
22 MGMT. UNITS			.3	7.1	6.2	42.0	19.3	1.0	10.0	4.5	8.5	1.1	3,026

^a Gear types: 1 = purse seine and 2 = gillnet

Table 9. Summary of average weight by age by bay of herring sac-roë stocks in the Kodiak Management Area, 1989.

STOCK NAME	GEAR TYPE	HARVEST DATE	2	3	4	AVERAGE WEIGHT BY AGE							TOTAL AVG.	N
						5	6	7	8	9	10	11+		
Malina Bay	1	4/23	42	80	103	131	151	-	-	-	-	-	100	162
Izhut Bay	1	4/18-4/22	-	-	144	187	234	281	261	304	305	317	212	133
Danger Bay	2	5/4	-	-	134	195	232	221	252	258	288	330	234	55
Viekoda Bay	1	5/12-5/18	-	83	-	188	237	235	275	264	286	310	246	59
Terror Bay	1	5/3	-	94	119	140	185	233	241	-	317	-	146	132
Village Island	1	5/3	-	-	129	162	212	-	302	269	250	-	187	37
W. Uganik Passage	1	5/4	-	80	121	152	206	237	219	276	250	-	177	64
S. Arm Uganik	1	5/1-5/2	-	88	129	146	179	220	-	249	293	142	150	173
Zachar Bay	1	5/11	-	98	132	165	216	-	219	276	271	-	187	135
Inner Uyak Bay	1	5/7-5/25	29	98	140	166	211	200	225	248	256	271	203	346
Deadman Bay	1	5/29	-	110	-	170	191	-	237	196	-	-	193	44
Sulua Bay	1	5/20-5/24	-	104	128	176	213	308	235	-	279	263	213	126
Olga Bay	1	6/24	64	83	124	154	169	-	220	209	285	219	126	134
W. Sitkalidak Strts.	1	4/19-4/29	79	-	154	210	245	295	278	287	318	279	230	296
Barling Bay	2	5/10	-	-	149	180	212	210	218	229	235	-	206	59
E. Sitkalidak Strts.	1	4/19-4/27	-	-	170	214	232	-	284	269	296	278	242	125
Tanginak Anchorage	1	4/22-4/23	-	-	-	206	243	252	278	283	306	-	244	54
Inner Kiliuda Bay	1	5/8	-	112	143	194	251	301	276	260	317	389	235	69
Shearwater Bay	1	5/1-5/3	-	-	185	202	251	304	287	275	292	312	246	57
Pasagshak Bay	1	4/26-5/1	80	108	-	213	237	256	282	308	318	316	252	120
Women's Bay	1	5/2-5/24	78	124	162	204	234	259	286	296	296	255	256	137
Sheratin Bay	1	5/22	65	129	137	203	250	244	-	305	312	331	215	52
22 MGMT. UNITS			60	85	130	176	224	251	269	271	276	284	199	2569

^a Gear types: 1 = purse seine and 2 = gill net.

Table 10. Summary of average lengths by age of herring sac-rope stocks in the Kodiak Management Area, 1989.

STOCK NAME	GEAR TYPE	HARVEST DATE	2	3	4	5	LENGTH-AT-AGE						TOTAL AVG.	N
							6	7	8	9	10	11+		
Malina Bay	1	4/23	157	183	201	215	224	-	-	-	-	198	268	
Izhut Bay	1	4/18-4/22	-	-	210	225	246	258	253	263	265	261	235	134
Danger Bay	2	5/4	-	-	211	241	253	254	259	255	272	279	254	55
Viekoda Bay	1	5/12-5/18	-	184	204	235	254	247	261	262	268	267	256	113
Terror Bay	1	5/3	-	194	208	217	236	258	254	-	275	-	219	132
Village Island	1	5/3	-	-	209	217	239	-	260	251	244	-	226	37
W. Uganik Passage	1	5/4	-	189	206	221	240	262	243	259	256	-	229	64
S. Arm Uganik	1	5/1-5/2	-	196	209	218	233	255	-	259	264	218	219	260
Zachar Bay	1	5/11	-	192	208	219	238	-	241	252	252	-	226	136
Inner Uyak Bay	1	5/7-5/25	137	204	213	222	238	233	243	249	251	262	234	354
Deadman Bay	1	5/29	-	194	214	227	239	-	243	252	251	-	238	156
Sulua Bay	1	5/20-5/24	-	200	210	230	244	266	254	-	259	260	243	127
Olga Bay	1	6/24	167	181	207	217	222	-	240	230	254	240	201	134
W. Sitkalidak Strts.	1	4/19-4/29	180	-	217	239	253	255	260	264	266	257	246	307
Barling Bay	2	5/10	-	-	234	252	263	269	265	266	272	-	261	60
E. Sitkalidak Strts.	1	4/19-4/27	-	195	231	241	251	-	260	261	265	266	250	134
Tanginak Anchorage	1	4/22-4/23	-	-	-	246	257	258	267	266	273	270	257	112
Inner Kiliuda Bay	1	5/8	-	206	223	241	260	265	266	279	277	282	253	69
Shearwater Bay	1	5/1-5/3	-	-	238	246	258	265	261	268	277	275	257	57
Pasagshak Bay	1	4/26-5/1	198	202	217	248	255	259	266	272	273	280	258	128
Women's Bay	1	5/2-5/24	184	215	224	244	253	254	266	272	268	271	257	137
Sheratin Bay	1	5/22	167	207	215	239	243	254	-	259	274	280	239	52
22 MGMT. UNITS			168	185	210	227	247	254	259	259	260	263	235	3026

^a Gear types: 1 = purse seine and 2 = gill net.

Table 11. Commercial herring fisheries historical harvest levels for the Kodiak Management Area, 1912-1989.

YEAR	FOOD & BAIT	SAC ROE	TOTAL	YEAR	FOOD & BAIT	SAC ROE	TOTAL	YEAR	FOOD & BAIT	SAC ROE	TOTAL
1912	20.0	0.0	20.0	1940	22677.0	0.0	22677.0	1968	15.4	2001.0	2016.4
1913	0.0	0.0	0.0	1941	40083.5	0.0	40083.5	1969	11.0	1130.0	1141.0
1914	0.0	0.0	0.0	1942	16791.0	0.0	16791.0	1970	7.5	342.0	349.5
1915	0.0	0.0	0.0	1943	35352.0	0.0	35352.0	1971	44.2	284.0	328.2
1916	70.0	0.0	70.0	1944	26835.0	0.0	26835.0	1972	49.8	215.0	264.8
1917	137.9	0.0	137.9	1945	31114.0	0.0	31114.0	1973	178.0	831.0	1009.0
1918	118.4	0.0	118.4	1946	47505.9	0.0	47505.9	1974	40.1	868.0	908.1
1919	259.7	0.0	259.7	1947	50743.0	0.0	50743.0	1975	5.2	8.0	13.2
1920	45.9	0.0	45.9	1948	46428.0	0.0	46428.0	1976	N/A	5.0	5.0
1921	944.9	0.0	944.9	1949	0.0	0.0	0.0	1977	N/A	338.0	338.0
1922	1482.6	0.0	1482.6	1950	44132.5	0.0	44132.5	1978	398.9	904.0	1302.9
1923	321.5	0.0	321.5	1951	4299.0	0.0	4299.0	1979	124.8	1736.0	1860.8
1924	4823.0	0.0	4823.0	1952	1389.0	0.0	1389.0	1980	380.7	2384.0	2764.7
1925	9997.0	0.0	9997.0	1953	725.0	0.0	725.0	1981	18.0	2063.0	2081.0
1926	2680.9	0.0	2680.9	1954	0.0	0.0	0.0	1982	326.0	1771.0	2097.0
1927	2592.9	0.0	2592.9	1955	0.0	0.0	0.0	1983	33.4	2319.0	2352.4
1928	625.0	0.0	625.0	1956	13524.0	0.0	13524.0	1984	123.0	2163.0	2286.0
1929	NO DATA	0.0	0.0	1957	21218.5	0.0	21218.5	1985	102.0	1968.0	2070.0
1930	622.0	0.0	622.0	1958	1711.0	0.0	1711.0	1986	213.0	1558.0	1771.0
1931	1000.0	0.0	1000.0	1959	3831.0	0.0	3831.0	1987	217.1	2146.0	2363.1
1932	3594.0	0.0	3594.0	1960	0.0	0.0	0.0	1988	340.2	2171.0	2511.2
1933	2312.5	0.0	2312.5	1961	0.0	0.0	0.0	1989	344.6	2248.6	2593.2
1934	60000.0	0.0	60000.0	1962	0.0	0.0	0.0				
1935	NO DATA	0.0	0.0	1963	0.0	0.0	0.0				
1936	24748.0	0.0	24748.0	1964	309.8	568.0	877.8				
1937	27659.3	0.0	27659.3	1965	35.0	657.0	692.0				
1938	24522.0	0.0	24522.0	1966	198.0	2769.0	2967.0				
1939	38600.5	0.0	38600.5	1967	300.3	1662.0	1962.3				

Table 12. Commercial trawl caught food/bait herring in the Kodiak Management Area, 1989-90.

Sample Period	Age (years)	Sex			Percent of Total		Weight			Std. Length			Tons	Adj. Tons
		Male	Female	Unknown	Total	Total	Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured		
TERROR BAY, STATISTICAL AREA UG21														
12/19	0	-	-	-	-	-	-	-	-	-	-	-	-	-
	1	3	1	3	7	3.4	52	17.2	7	159	14.7	7	.88	3.28
	2	46	49	9	104	51.0	75	11.4	104	178	6.8	104	18.82	48.72
	3	7	9	-	16	7.8	132	30.7	16	204	13.9	16	5.14	7.50
	4	2	3	-	5	2.5	164	31.2	5	222	9.7	5	1.99	2.34
	5	16	15	-	31	15.2	193	23.8	31	232	8.5	31	14.52	14.52
	6	10	13	-	23	11.3	230	25.5	23	244	9.9	23	12.85	12.85
	7	1	2	-	3	1.5	275	15.0	3	255	4.0	3	2.01	2.01
	8	2	5	-	7	3.4	260	19.4	7	255	9.3	7	4.42	4.42
	9	-	2	-	2	1.0	277	15.6	2	253	2.1	2	1.35	1.35
	10	-	2	-	2	1.0	275	.7	2	256	.7	2	1.33	1.33
11+	1	3	-	4	2.0	300	28.1	4	261	3.0	4	2.91	2.91	
Period total		88	104	12	204	100.0	134	75.9	204	203	32.2	204	66.23	101.24
VIEKODA BAY, STATISTICAL AREA UG20														
12/14	0	-	-	-	-	-	-	-	-	-	-	-	-	-
	1	-	-	1	1	1.4	164	-	1	147	-	1	.61	.69
	2	3	2	-	5	6.8	75	21.2	5	182	4.4	5	1.39	3.44
	3	4	2	-	6	8.1	126	15.4	6	203	8.6	6	2.79	4.13
	4	2	1	-	3	4.1	180	64.5	3	214	11.0	3	2.00	2.07
	5	12	9	-	21	28.4	186	46.3	21	228	10.2	21	14.46	14.46
	6	10	12	-	22	29.7	213	27.6	21	241	6.5	22	17.35	17.35
	7	2	2	-	4	5.4	244	27.8	4	245	7.4	4	3.61	3.61
	8	3	4	-	7	9.5	239	50.8	7	251	15.1	7	6.20	6.20
	9	3	-	-	3	4.1	266	56.1	3	257	7.8	3	2.95	2.95
	10	1	-	-	1	1.4	226	-	1	233	-	1	.84	.84
11+	1	-	-	1	1.4	295	-	1	230	-	1	1.09	1.09	
Period total		41	32	1	74	100.0	192	59.3	73	230	23.2	74	53.28	56.82

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Table 12. (page 2 of 3)

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length			Tons	Adj. Tons
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured		
12/14 #2	0	-	-	-	-	-	-	-	-	-	-	-	-	-
	1	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	2	4	1	7	6.0	76	18.6	7	179	11.9	7	1.36	3.74
	3	3	1	-	4	3.4	147	3.6	4	209	2.6	4	1.51	2.14
	4	3	1	-	4	3.4	164	21.2	4	219	6.7	4	1.68	2.14
	5	14	9	-	23	19.8	208	30.9	23	237	10.1	23	12.28	12.28
	6	18	17	-	35	30.2	220	29.5	35	242	9.7	35	19.75	19.75
	7	1	2	-	3	2.6	279	21.9	3	254	3.2	3	2.15	2.15
	8	11	8	-	19	16.4	271	26.7	19	255	6.9	19	13.22	13.22
	9	7	4	-	11	9.5	271	32.0	11	254	10.4	11	7.67	7.67
	10	2	4	-	6	5.2	298	40.9	6	260	11.0	6	4.60	4.60
	11+	3	1	-	4	3.4	337	24.1	4	241	2.9	4	3.47	3.47
Period total		64	51	1	116	100.0	139	62.2	116	241	21.9	116	67.69	71.14
RASPBERRY STRAITS, STATISTICAL AREA A010														
11/27-28	0	-	-	-	-	-	-	-	-	-	-	-	-	-
	1	-	-	7	7	1.9	33	6.8	7	139	8.8	7	.48	2.53
	2	17	22	7	46	12.6	88	29.4	32	179	17.8	46	8.45	16.64
	3	37	28	1	66	18.1	127	16.7	49	206	14.6	66	17.40	23.88
	4	17	24	-	41	11.3	162	28.6	31	218	8.7	41	13.86	14.83
	5	50	36	-	86	23.6	174	30.5	59	225	11.4	86	31.11	31.11
	6	36	35	-	71	19.5	209	33.4	52	236	12.0	71	30.82	30.82
	7	4	-	-	4	1.1	213	17.8	4	243	8.7	4	1.77	1.77
	8	6	8	-	14	3.8	255	20.9	8	248	8.5	14	7.42	7.42
	9	3	7	-	10	2.7	244	26.7	7	255	9.0	10	5.08	5.08
	10	3	5	-	8	2.2	274	21.0	4	258	7.5	8	4.56	4.56
	11+	6	5	-	11	3.0	279	25.5	5	257	5.5	11	6.38	6.38
Period total		179	170	15	364	100.0	165	59.3	258	219	27.1	364	127.35	145.05

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Table 12. (page 3 of 3)

Sample Period	Age (years)	Sex			Percent of Total		Weight			Std. Length			Tons	Adj. Tons
		Male	Female	Unknown	Total	Total	Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured		
KUPREANOF STRAITS, STAISTICAL AREA UG10														
11/14	0	-	-	-	-	-	-	-	-	-	-	-	-	-
	1	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	2	1	-	3	3.9	93	8.7	3	183	4.5	3	.02	.04
	3	-	2	-	2	2.6	137	37.5	2	198	11.3	2	.02	.03
	4	4	-	-	4	5.2	161	34.7	4	212	12.6	4	.05	.06
	5	12	8	-	20	26.0	190	27.6	20	222	10.0	20	.28	.28
	6	12	11	-	23	29.9	225	24.7	23	232	7.8	23	.38	.38
	7	-	3	-	3	3.9	232	9.6	3	241	4.7	3	.05	.05
	8	4	6	-	10	13.0	262	27.9	10	242	9.8	10	.19	.19
	9	3	4	-	7	9.1	258	27.8	7	239	9.6	7	.13	.13
10	-	-	-	-	-	-	-	-	-	-	-	-	-	
	11+	4	1	-	5	6.5	302	32.7	5	243	19.6	5	.11	.11
Period total		41	36	-	77	100.0	218	52.0	77	228	16.8	77	1.22	1.26

Table 13. M/V RESOLUTION test trawl caught food/bait herring in the Kodiak Management Area, 1989-90.

Sample Period	Age (years)	Sex			Percent of Total	Weight			Std. Length			
		Male	Female	Unknown		Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured	
VIEKODA BAY, STATISTICAL AREA UG20												
11/18 #1	0	-	-	1	1	.4	-	-	-	66	-	1
	1	8	11	160	179	77.8	34	6.8	179	137	9.2	179
	2	-	2	1	3	1.3	76	16.6	3	173	8.1	3
	3	1	1	-	2	.9	149	33.2	2	210	7.8	2
	4	2	3	-	5	2.2	191	16.5	5	225	5.1	5
	5	6	8	-	14	6.1	199	17.2	14	229	7.0	14
	6	6	9	-	15	6.5	225	16.1	15	239	5.4	15
	7	1	1	-	2	.9	247	31.1	2	242	12.0	2
	8	1	1	-	2	.9	274	3.5	2	261	2.1	2
	9	1	-	-	1	.4	298	-	1	251	-	1
	10	3	1	-	4	1.7	272	12.8	4	254	6.4	4
11+	1	1	-	2	.9	306	36.1	2	157	9.2	2	
Period total		30	38	162	230	100.0	73	78.3	229	157	42.2	230
11/18 #2	0	-	-	-	-	-	-	-	-	-	-	-
	1	-	-	24	24	17.9	28	7.5	24	127	11.6	24
	2	3	1	3	7	5.2	78	14.3	7	174	8.9	7
	3	3	3	-	6	4.5	129	23.0	6	202	12.1	6
	4	5	5	-	10	7.5	175	17.7	10	226	8.6	10
	5	13	14	-	27	20.1	186	28.4	27	223	10.9	27
	6	12	17	-	29	21.6	227	22.3	29	239	9.2	29
	7	3	1	-	4	3.0	229	18.9	4	240	6.2	4
	8	2	7	-	9	6.7	266	16.0	9	249	3.9	9
	9	3	2	-	5	3.7	256	30.6	5	244	8.8	5
	10	3	3	-	6	4.5	265	24.6	6	252	9.9	6
11+	5	2	-	7	5.2	266	79.5	7	211	25.0	7	
Period total		52	55	27	134	100.0	64	86.5	134	211	44.5	134

-Continued-

Table 13. (page 2 of 4)

Sample Period	Age (years)	Sex			Percent of Total		Weight		Number Weighed	Std. Length		
		Male	Female	Unknown	Total	Total	Mean (gm)	Std. Dev.		Mean (mm)	Std. Dev.	Number Measured
ALL PERIODS												
	0	-	-	1	1	.3	-	-	-	66	-	1
	1	8	11	184	203	55.8	33	7.1	203	135	10.0	203
	2	3	3	4	10	2.7	78	14.1	10	174	8.2	10
	3	4	4	-	8	2.2	134	24.9	8	204	11.3	8
	4	7	8	-	15	4.1	180	18.4	15	226	7.4	15
	5	19	22	-	41	11.3	190	25.6	41	225	10.0	41
	6	18	26	-	44	12.1	226	20.3	44	239	8.0	44
	7	4	2	-	6	1.6	235	22.3	6	241	7.2	6
	8	3	8	-	11	3.0	267	14.7	11	251	5.8	11
	9	4	2	-	6	1.6	263	32.2	6	246	8.3	6
	10	6	4	-	10	2.7	268	20.1	10	253	8.4	10
	11+	6	3	-	9	2.5	275	72.1	9	177	22.8	9
Total		82	93	189	364	100.0	55	94.9	363	177	50.4	364
RASPBERRY STRAITS, STATISTICAL AREA A010												
	0	-	-	-	-	-	-	-	-	-	-	-
	1	-	-	12	12	6.0	27	9.6	12	130	12.8	12
	2	14	17	2	33	16.6	81	13.8	23	179	15.4	33
	3	11	13	-	24	12.1	119	12.1	11	204	8.3	24
	4	11	5	-	16	8.0	154	22.3	5	215	10.7	16
12/ 6	5	24	28	-	52	26.1	170	26.3	27	225	11.1	52
	6	15	23	-	38	19.1	215	20.5	15	240	7.3	38
	7	1	-	-	1	.5	188	-	1	230	-	1
	8	5	3	-	8	4.0	238	3.5	2	247	6.7	8
	9	1	2	-	3	1.5	304	-	1	251	3.2	3
	10	2	4	-	6	3.0	261	61.7	4	250	14.4	6
	11+	4	2	-	6	3.0	277	61.5	2	214	12.0	6
Period total		88	97	14	199	100.0	74	72.5	103	214	32.9	199

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Table 13. (page 3 of 4)

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
KUPREANOF STRAITS, STAISTICAL AREA UG10												
12/7	0	-	-	-	-	-	-	-	-	-	-	-
	1	2	-	323	325	89.0	31	11.6	224	133	8.3	325
	2	4	3	9	16	4.4	65	36.3	16	157	28.1	16
	3	7	1	1	9	2.5	121	40.6	9	194	24.3	9
	4	-	2	-	2	.5	135	4.2	2	205	3.5	2
	5	4	4	-	8	2.2	184	24.3	8	212	34.9	8
	6	1	2	-	3	.8	194	18.0	3	228	5.5	3
	7	-	-	-	-	-	-	-	-	-	-	-
	8	-	-	-	-	-	-	-	-	-	-	-
	9	-	-	-	-	-	-	-	-	-	-	-
	10	1	1	-	2	.5	285	37.5	2	250	12.0	2
	11+	-	-	-	-	-	-	-	-	-	-	-
Period total		19	13	333	365	100.0	45	44.7	264	139	23.0	365
RASPBERRY STRAITS, STATISTICAL AREA A010												
1/13 tow 1	0	-	-	-	-	-	-	-	-	-	-	-
	1	-	-	-	-	-	-	-	-	-	-	-
	2	2	8	1	11	5.5	97	61.0	11	187	26.5	11
	3	4	5	-	9	4.5	140	44.3	9	202	7.6	9
	4	8	6	-	14	7.0	160	56.2	14	212	22.1	14
	5	33	31	-	64	32.2	187	36.8	64	227	11.4	64
	6	21	29	-	50	25.1	217	28.9	50	238	10.6	50
	7	1	2	-	3	1.5	245	4.6	3	248	6.0	3
	8	10	7	-	17	8.5	254	25.8	17	250	9.3	17
	9	7	8	-	15	7.5	272	21.4	15	255	7.7	15
	10	3	5	-	8	4.0	279	33.9	8	257	10.2	8
	+11	1	7	-	8	4.0	293	41.6	8	260	12.3	8
Period Total		90	108	1	199	100.0	206	59.4	199	232	21.9	199

-Continued-

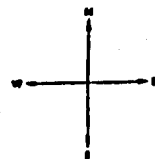
Table 13. (page 4 of 4)

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
1/13 tow 2	0	-	-	-	-	-	-	-	-	-	-	-
	1	-	-	15	15	4.9	23	10.9	15	128	20.3	15
	2	23	16	11	50	16.4	73	10.6	50	176	6.6	50
	3	16	14	-	30	9.9	127	36.4	29	205	14.1	30
	4	8	15	1	24	7.9	152	34.0	24	216	16.0	24
	5	37	35	-	72	23.7	172	35.2	72	224	12.8	72
	6	24	25	-	49	16.1	204	38.4	49	235	13.0	49
	7	3	3	-	6	2.0	234	44.4	6	249	2.8	6
	8	10	7	-	17	5.6	243	40.3	17	249	13.1	17
	9	6	5	-	11	3.6	257	32.9	11	250	9.1	11
	10	5	9	-	14	4.6	253	28.1	14	250	12.2	14
	+11	5	11	-	16	5.3	257	58.8	16	250	20.0	16
Period Total		137	140	27	304	100.0	164	73.9	303	216	33.7	304
ALL PERIODS COMBINED												
	0	-	-	-	-	-	-	-	-	-	-	-
	1	-	-	15	15	3.0	23	10.9	15	128	20.3	15
	2	25	24	12	61	12.1	78	28.2	61	178	13.1	61
	3	20	19	-	39	7.8	130	38.2	38	204	12.9	39
	4	16	21	1	38	7.6	155	42.9	38	215	18.3	38
	5	70	66	-	136	27.0	179	36.6	136	225	12.2	136
	6	45	54	-	99	19.7	210	34.4	99	237	11.8	99
	7	4	5	-	9	1.8	238	35.6	9	248	3.8	9
	8	20	14	-	34	6.8	248	33.8	34	249	11.2	34
	9	13	13	-	26	5.2	266	27.3	26	253	8.5	26
	10	8	14	-	22	4.4	262	32.3	22	252	11.7	22
	+11	6	18	-	24	4.8	269	55.5	24	253	18.1	24
Total		227	248	28	503	100.0	181	71.5	502	222	30.6	503

KODIAK AREA HERRING STATISTICAL CHART

REVISED 1 MARCH 1985

THIS CHART IS PRINTED AS A COURTESY BY A.D.F. & G. AND IS INTENDED PRIMARILY AS A GUIDE FOR FISHERMEN AND INDUSTRY PERSONNEL TO USE WHEN REPORTING ON FISH TICKETS THE CORRECT STATISTICAL CATCH AREAS FOR EACH COMMERCIAL HERRING DELIVERY. FOR EXACT DESCRIPTIONS OF DISTRICTS AND SUBSECTIONS, CONSULT THE CURRENT ISSUE OF THE ALASKA COMMERCIAL FISHING REGULATIONS FOR HERRING.



MAINLAND DISTRICT

MD10 NORTH MAINLAND
MD20 INNER KUPAK
MD30 OUTER KUPAK
MD40 MISSAK
MD50 INNER KATHAI
MD60 OUTER KATHAI
MD70 ALTHAKAK
MD80 PAULIE BAY
MD90 PORTAGE BAY
MD100 OUTER PORTAGE BAY
MD110 WIDE BAY
MD120 LOWER SHELIKOF

UGAK DISTRICT

UG10 KUPREANOF
UG20 VIERKODA
UG31 TERROR
UG30 VILLAGE ISLANDS
UG31 W. UGAK PASS.
UG32 NE. ARM UGAK
UG33 E. ARM UGAK
UG34 S. ARM UGAK
UG40 OFFSHORE UGAK

UYAK DISTRICT

UY10 OFFSHORE UYAK
UY20 HARVESTON ISLAND
UY30 INNER UYAK
UY31 LARSEN BAY
UY40 ZACHAR BAY
UY50 SPIRIDON BAY

STURGEON/HALIBUT DISTRICT

SH10 NO SUBSECTIONS

ALITAK DISTRICT

AL10 OUTER ALITAK
AL20 INNER ALITAK
AL21 DEADMAN BAY
AL30 SULLUA/PORTAGE BAY
AL40 LOWER OLGA/POZER BAY
AL50 UPPER OLGA BAY
AL60 GESE/TWOHEADED

ATOGAK DISTRICT

A010 RASPBERRY STRAITS
A020 MALINA BAY
A031 PARANHOOF BAY
A032 FOXA BAY
A040 BLUE FOX
A050 OFFSHORE WEST. ATOGAK
A060 SHUYAK ISLAND
A070 PERENOSA BAY
A071 DELPHIN BAY
A072 SEAL BAY
A080 TONKI BAY
A090 IDAUT BAY
A091 KITOI BAY
A092 McDONALDS LAGOON
A100 DANKER BAY
A101 LITNIK
A102 INSHORE HAWKOT

GENERAL DISTRICT

G010 KATURNAK
G020 W. SITKALIDAK STRAITS
G021 BARLING
G022 E. SITKALIDAK STRAITS
G023 TANGINAK ANCHORAGE
G030 OUTER SITKALIDAK
G040 OUTER KILLILDA
G041 INNER KILLILDA
G042 SHEARWATER
G050 OUTER UGAK
G051 INNER UGAK
G060 WOMEN'S BAY
G070 MENASHKA/MILLBAY
G080 ANTON LARSEN
G081 SHERATIN
G090 KIDZUYAK
G100 KALSIN BAY
G101 MIDDLE BAY
G102 INSHORE CHINTIAK
G103 SPRUCE ISLAND

Figure 1.

KODIAK MANAGEMENT AREA HERRING FOOD/BAIT FISHERY STATISTICAL CHART

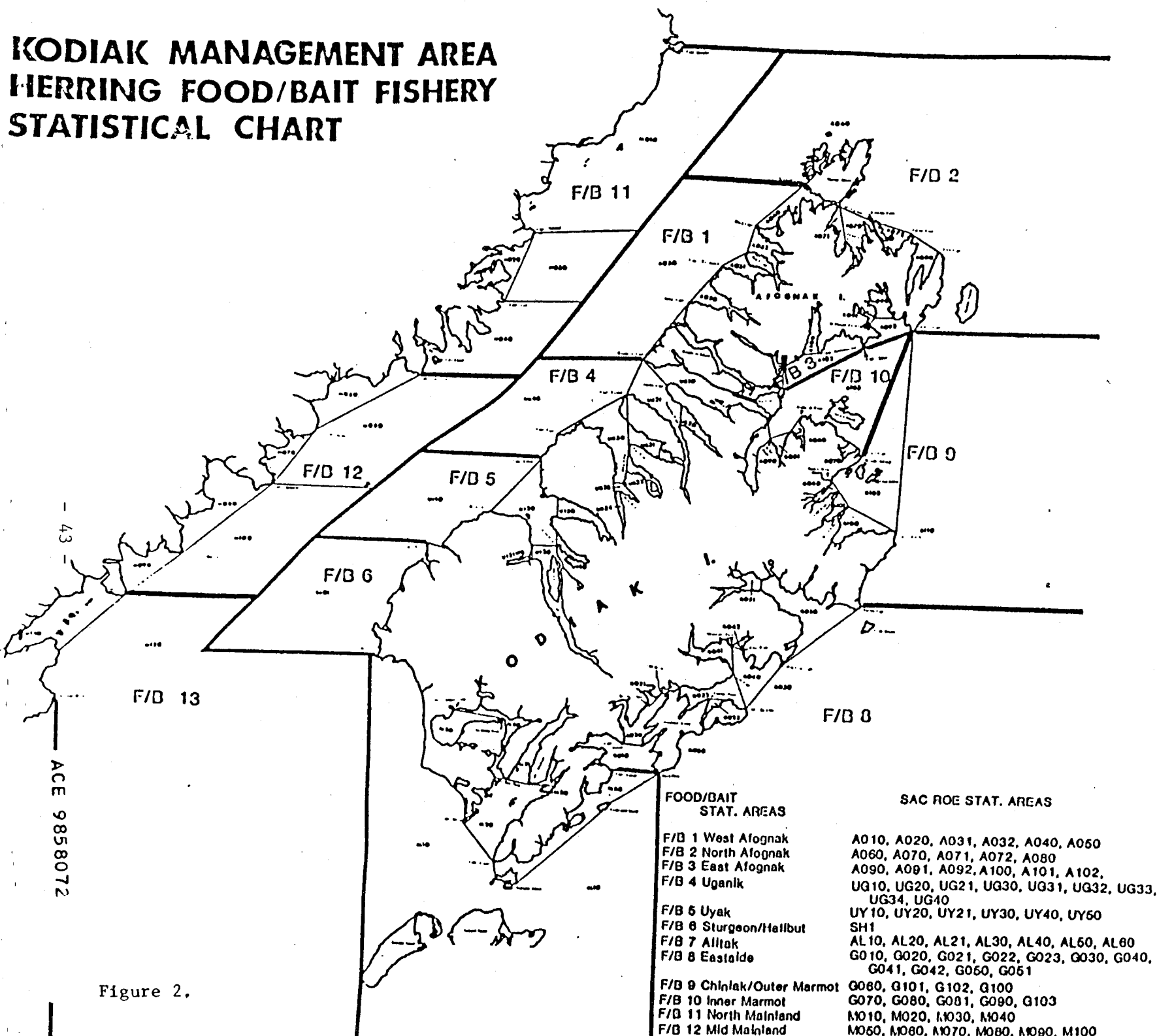


Figure 2.

1989

KODIAK MANAGEMENT AREA
HERRING SAC-ROE HARVEST STRATEGY

by: Larry Malloy, Area Management Biologist

Dave Prokopowich, Asst. Area Management Biologist

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Alaska Department of Fish and Game
Division of Commercial Fisheries
211 Mission Road
Kodiak, Alaska 99615

April 1989

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ABSTRACT

The 1989 Kodiak herring sac-roë fishery guideline harvest level is 2,415 tons. The season for this fishery will begin at 12:00 noon on April 15 and will close at 12:00 noon on June 30. Fishing periods will be 24 hours in duration and each will begin at 12:00 noon on odd numbered days and end at 12:00 noon on even numbered days.

The Kodiak sac-roë fishery is currently managed by the use of 57 management units which are treated as individual stocks and have a history of sac-roë harvests. Additionally there are 14 exploratory management units which potentially support sac-roë stocks and 6 management units which occur offshore and are not perceived to have habitat suitable for spawning activity to occur.

Guideline Harvest Levels (G.H.L.) are provided for each of the 57 management units as shown in Table 1 on page 11. In-season emergency order closures for each unit will occur as the G.H.L.'s for each unit are achieved or exceeded. Closures may also result prior to attaining a G.H.L. if the fishery performance indicates that stock status is weaker than expected.

All in-season emergency order closures or reopenings will be broadcasted on 4125 Khz by Peggy Dyson following her daily marine weather broadcasts at 8:00 a.m. and 6:00 p.m. Additionally, news releases will be available both inside and outside the Kodiak ADF&G building at past locations.

There are several new regulations that will be in effect for the first time during the 1989 season. These regulations are listed on page 2; A complete copy of the Kodiak Area Herring Regulations are attached to the Harvest Strategy.

All herring buyers/processors and all tenders are required to register at the Kodiak ADF&G office prior to commencing operations in the Kodiak Area. There is no special vessel registration required for fishing vessels.

1988
KODIAK AREA HERRING SAC-ROE FISHERY

INTRODUCTION

The Kodiak Area herring sac-roë fishery has occurred annually since 1964, a 25 year period. This fishery was an open-to-entry fishery from 1964 to 1980, and was under a moratorium-to-new-entry fishery from 1981 to 1984, and has been a limited entry fishery from 1985 to present. Effort levels during these latter years are shown in Table 2 on page 15. A listing of entry permits issued by gear type as of January 1988 is shown in Table 3 on page 16.

This fishery targets on individual herring stocks during their spawning period. The desired product is pre-spawn herring having a roe recovery percentage acceptable to industry. In recent years the average roe recovery has approximated 10% in this fishery.

During this 25 year period the average harvest has been 1,314 tons. For the ten (10) year period from 1979-1988, when both seine and gillnet gear levels have evolved through similar regulatory adjustments, the average harvest has been 2,028 tons. The annual harvest levels during this nine year period have oscillated closely around this average harvest (Table 2, page 15).

GENERAL HARVEST POLICY

Harvesting is intended to occur in an orderly fashion with minimal waste of the resource and within conservation limits as determined by the Alaska Department of Fish and Game (ADF&G). Consequently, ADF&G will manage the fishery per the statewide general herring policy which provides for harvesting to occur in traditional in-shore areas and at the traditional time of greatest roe recovery value, so much as possible. However, roe recovery will not be a criteria for emergency openings or closures except in cases where documented excessive wastage is, or is expected to be, a factor.

Because of the differential timing and abundance of Kodiak's various exploited herring stocks, relatively high ratio of gear levels to Guideline Harvest Levels (GHL's), and the competition between gear types for the same stocks, this fishery is best served by a fixed opening date, which is currently April 15. The season will close for each stock by emergency order as their respective guideline harvest levels are achieved or when fishery performance and stock performance indicate that deviations from the guideline harvest levels are warranted, i.e. where actual harvests occur at levels greater or lesser than expected. Stocks which are considered to be under-exploited in-season will

remain open until the regulatory closure of June 30. During the regulatory season, April 15 to June 30, stocks which have been closed to harvesting may be reopened if it is determined by ADF&G that "new" fish have increased the available spawning biomass to the point that the initial exploitation rate has dropped below 10% for that stock (See Table 1.) Any reopenings will require confirmation that the "new" fish are not juvenile herring, post spawners, or other forage fish and will require that ADF&G have the ability to monitor and regulate the reopening "on the grounds". At least 24 hours notice will be given prior to any reopenings.

REGULATORY ABSTRACT

REGULATIONS IN EFFECT:

A complete copy of the 1989 Commercial Herring Regulation is attached to this Harvest Strategy on page 18. The 1989 Commercial Herring Fishing Regulation Book will not be available by the season's opening date. The Kodiak Management Area regulations attached to this management plan are the correct regulations for the 1989 season. The General Provisions and selected statutes in the 1988 Herring Regulation Book will apply for the 1989 season. A listing of the new regulations for 1989 is as follows:

NEW REGULATIONS FOR 1989

- 5 AAC 27.505 DESCRIPTION OF DISTRICTS AND SECTIONS (b)(2)(B)
 - The common boundary line between the West Uganik Section and the Terror Bay Section has been moved east from 153°20' W. long to 153°15'42" W. long.
 - See page 21 of this Harvest Strategy, section (b)(2) and (b)(2)(B).
- 5 AAC 27.515 GEAR (b)
 - New wording has been added to the section describing the conditions under which a herring vessel may operate its gear.
 - The new wording states:....., except that a herring fishing vessel may tow or transport other herring fishing vessels containing those vessels own gear.
 - See page 23 of this Harvest Strategy, section (b)

- 5 AAC 27.520 GILL NET SPECIFICATIONS AND OPERATION (c)

- New wording has been added to the section describing how gill nets must be marked.
 - the new wording states:..., All buoys must be at least 10 inches in diameter and all buoys used on an individual gill net must be of the same color.
- See page 24 of this Harvest Strategy, section (c).

- 5 AAC 27.530 WATERS CLOSED TO HERRING FISHING (b)(1)

- The 500 yard closure off of the mouth of Browns Lagoon has been eliminated.
 - The new wording describing closed waters states:..., Browns Lagoon: in the lagoon.
- See page 24 of this Harvest Strategy, section (b)(1).

- 5 AAC 27.535 HARVEST STRATEGIES (2)(c)

- New wording describes the harvest allocation of Kodiak herring stocks between Kodiak's sac-roe fishery and its food/bait fishery.
- Also described is the harvest allocation of Kamishak (Cook Inlet) stocks between the Kamishak sac-roe fishery and the Kodiak food/bait fishery.
- See page 24 of this Harvest Strategy, sections (2)(c).

- 5 AAC 27.536 SIZE LIMITS

- This is a new section defining a minimum size limit for herring landed as determined by a sampling method consistent with the sampling method for determining a roe percentage for each landing.
 - The new wording states: No CFEC herring seine permit holder may sell or have aboard a vessel any herring that were taken during the herring sac-roe season if the number of individual herring per 50 pounds of net weight exceeds 250 fish.

- See page 24 of this Harvest Strategy.
- This regulation was developed by Kodiak ADF&G staff in order to provide adequate protection to any stock heavily dominated by recruit-age fish. This regulation was supported by the Kodiak Fish and Game Advisory Committee and was unanimously supported by the Alaska Board of Fisheries.
- It was recognized that this regulation was unique for the State's sac-ro-e fisheries, however the Kodiak sac-ro-e fishery itself is unique in the manner it is conducted. By allowing a free-roaming fleet to randomly harvest any of the recognized 57 stocks without 100% on-the-grounds monitoring by ADF&G, the potential negative impact on all stocks is relatively high. This is particularly true for smaller stocks heavily composed of recruit-age fish. This regulation was intended to provide biological protection for these stocks without affecting the unique nature of Kodiak's sac-ro-e fishery.
- All fishermen must be able to evaluate, on the grounds, before "seined-up" herring are killed, if the school of herring they've captured is comprised of large enough herring so that a weighed sample of 50 pounds is not comprised of more than 250 fish, i.e. the herring are large enough that it doesn't require 5 or more herring to yield one pound of net weight.

This can be determined through the normal process of sampling seined-up herring for adequate roe-recovery. At that time, through the use of a small scale, it can be determined if the "number per weight" requirements will be met, i.e. the number of herring comprising the catch does not exceed 250 fish per 50 pounds of net weight.

It will be illegal to possess or sell a quantity of herring which, when sampled, does not meet this minimum size limits of 250 fish per 50 pounds of net weight.

REGISTRATION REQUIREMENTS:

Tenders and Processors

The tender registration procedure requires:

- Each tender operator and processor must register either in person or may be registered by an authorized agent for the tender or processor.
- Registration must occur prior to taking fish on-board the tender or taking fish at the processing plant.

Registration will ensure that all tenders and processors know the proper reporting requirements needed by ADF&G to manage the herring sac-roë fishery.

THIS REGULATION WILL BE STRICTLY ENFORCED FOR THE 1989 SEASON!

- (See Regulation 5 AAC 27.540 of the Commercial Herring Regulations.

Fishing Vessels

There are no special registration requirements for either seine or gillnet vessels.

GUIDELINE HARVEST LEVELS:

For the 1989 sac-roë season, approximately 2,415 short tons are expected to be harvested from the entire management area. Harvest projections by management unit are listed in Table 1.

These harvest projections are the best estimates of desired harvest levels for each stock based upon ADF&G evaluation of stock status. These harvest projections are not guaranteed quotas and the actual harvest may exceed or fall short of these projections.

In-season evaluation of each stocks actual status will be guided by several criteria associated with stock performance, e.g. biomass estimates, etc! and with fishery performance, e.g. fishery timing and duration, etc!

FISHING SEASON

April 15 through June 30 unless closed earlier by emergency order on a stock by stock basis.

Closures may result from desired harvest levels of each stock either being achieved or else in jeopardy of being significantly exceeded. Closures may also result when unexpected weaknesses in stock strength become apparent.

FISHING PERIODS

Initially, fishing periods will be 24 hours long. They will begin at 12:00 Noon on all odd numbered days and end at 12:00 Noon on all even numbered days. The first 24 hour fishing period will begin at 12:00 Noon on April 15.

CLOSED AREAS:

Regulatory Closures

Women's Bay is closed inside of a line from Shannon's Point to Nyman's Peninsula. The latitudes and longitudes of these points are described in regulation 5 AAC 27.530.

1989 Emergency Order Closures:

All Uganik Island Lagoons will remain closed until it can be determined that specific and adequate spawning biomasses are available for harvest.

EXTRA TIME FOR GILLNETTERS

Under certain conditions, herring gillnetters are allowed a two hour grace period before having to completely remove their gear from the water. These conditions are:

1. Herring gillnets may remain in the water up to two hours after the announced "primary closure time" for those announced fishing periods having fishing time of three hours or less.
2. Herring gillnets may remain in the water up to two hours after the announced "primary" closure time for those fishing periods greater than three hours in length, where the announcement occurs less than three hours before the scheduled "primary closure time" of the fishing period.

The "primary closure time" is the time at which all seine gear must have completed fishing. When it applies, the "secondary closure time", i.e. at the end of the two hour grace period for gillnet gear, ALL GILLNETS MUST BE COMPLETELY OUT OF THE WATER AND NO GILLNET GEAR MAY BE SET OR RESET AFTER THE "PRIMARY CLOSING TIME".

AIRPLANES:

There are no restrictions on the use of airplanes in the roe herring fishery.

LEGAL GEAR:

See regulations 5 AAC 27.515, 27.520, and 27.525 on pages 23 and 25 of this "Harvest Strategy" document.

IN-SEASON STRATEGY

General Discussion

As shown in Table 1, those sections where historical harvests have occurred have been assigned guideline harvest levels. Those sections where sporadic or no harvests have occurred have been designated "Exploratory" with no designated guideline harvest level, however in-season closures will be used to ensure that excessive harvests are minimized in exploratory situations.

The guideline harvest levels established for each section, district and/or the entire management area are meant to reflect the stock status. This means that the previous season's stock performance has been evaluated and that trends have been identified and used to influence the current season's GHL's. Specifically, these criteria are 1) 1989 expected biomass vs. actual biomass estimates, 2) average school size, 3) trends in age composition, 4) level of recruitment (age 3), 5) proportion of the spawning population age 5 and younger, 6) level of age 2 fish in the spawning biomass (indicator of future recruit strength) and 7) spawn observations (extent, frequency, amount deposited). This information is supplemented by fishery performance information, namely the expected vs. actual harvest timing, harvest duration, and harvest level.

Guideline harvest level adjustments are subsequently made based upon the aforementioned criteria. Adjustments may vary from 0 to $\pm 100\%$ of the previous season's GHL depending upon the degree remedial action is required, generally adjustments are gradual, $\pm 25\%$ or $\pm 50\%$. For the 1989 season most stocks were adjusted by $+25\%$. Several stocks were adjusted by $+50\%$ and a few remained at the 1988 level (particularly smaller stocks). Only one was adjusted by -25% ; there were no downward adjustments greater than -25% .

At any time in-season, closed area adjustments can be made when it appears that pre-season expectations were wrong. Consequently there may be sections either closed prior to reaching their GHL's or allowed to harvest in excess of their GHL's either in one opening or reopenings if the assessed available spawning biomass warrants it.

Fishing Periods

Initially, fishing periods will begin at 12:00 Noon on the odd numbered days of the month beginning on April 15 and end at 12:00 Noon on the even numbered days. Staggered days of fishing have the advantage of providing clearly defined closed periods which allow the staff time to collect, summarize, and update all harvest data from previous fishing periods; it allows for comparisons between reported and actual harvests. Since 1979, the occurrence of significant excessive harvests in this fishery have been prevented by providing these pre-established fishing periods. Towards the end of the season (usually early June) when fleet size and exploited stocks are few in number, fishing periods may be modified to provide more continuous fishing time to facilitate adequately harvesting late occurring stocks. However, ADF&G's ability to monitor this fishery becomes very limited by late May and June and this will be a major consideration in the nature of fishing period modifications.

For the 1989 sac-roe fishery, more restrictive adjustments in fishing periods are not expected to occur. However, in the event that active gear levels expand or become unexpectedly efficient to the point that a pattern of excessive harvests develop, deviations from the normal 24 hour fishing periods may be required.

E.O. Announcements: "Getting the Word"

Because the management strategy for this fishery allows for all gear to fish all open areas during the open fishing periods, there is considerable dispersion of gear throughout the season. Consequently, it is very important for the fleet to keep abreast of any changes in closures, potential short notice closures, and/or reopenings. This can be accomplished in the following ways: 1) By personal contact with the Kodiak Herring Management staff in Kodiak via office visits, telephone (either at work or at home), or radio-telephone; 2) By contact with ADF&G field personnel and the ADF&G vessel, the M/V COHO; 3) By contacting Peggy Dyson on 4125 mhs or any local herring processor and having them transmit the latest Kodiak herring emergency order; 4) By calling the 24-hour recorded message phone at 486-4559; 5) By listening for any emergency order update which will be broadcast by Peggy Dyson following either her 8:00 A.M. or 6:00 P.M. weather broadcasts; 6) By reading or collecting the latest emergency order from the pouch posted outside the entrance to the Kodiak Fish and Game building; and 7) By listening to the Fish and Game reports broadcast over the local AM and FM radio stations (consult stations for broadcast times). No announcements will be given via VHF because of the limited broadcast range from the Kodiak

office; however special consideration may be given to the Chiniak Bay fishery if the VHF base station is operational for the 1989 season.

Because of the extensive announcements associated with this fishery, it is highly recommended that fishermen document the latest E.O. announcement broadcast from Peggy Dyson by either marking a chart or making a tape recording of her broadcast. Many fishermen currently do this as do the ADF&G and F&W protection vessels.

ADF&G Field Crews/Fishermen Cooperation:

The crew on-board the Department's M/V COHO and seasonal biologists in remote tent camps will aid the Area Management Biologists by making frequent fishermen contacts in order to collect data on harvest levels and rates, fleet movements, and fleet observations of herring concentrations. Fishermen cooperation will be appreciated when Department personnel request herring samples from the commercial catch; also, samples from juvenile schools inadvertently seined-up will be gladly accepted by all ADF&G personnel. These samples will be used primarily for monitoring age composition, which assists in determining the health of the stock when used with other stock performance indicators. Copies of historical age data by stock are readily available at the Kodiak ADF&G office.

ADF&G field crews will also be monitoring and mapping spawning activities, and all will be soliciting information on commercial sightings to supplement information gathered by ADF&G. Fishermen and spotter pilots are encouraged to provide biomass and spawning information to ADF&G; these reports will be treated confidentially. Past cooperation has generally been excellent and has proven valuable in evaluating stock status and in gaining critical management information.

Because of concern over the occurrence of oil from the March 24, 1989 oil spill in P.W.S. affecting Kodiak fish stocks, habitat, and other wildlife, any information on oil encountered by fishing vessels, tenders and spotter pilots should be passed along to ADF&G personnel for documentation.

In-Season Catch Reporting

With approximately 100+ limited entry permit holders expected to fish during the 1989 sac-roë season, frequent aerial surveys and timely catch reports will continue to be an important management tool, particularly in areas that are not covered by field crews. Timely and accurate catch information provided by the processors and fishermen will be

essential in managing the fishery. Processors and independent tender operators will be required to provide daily tallies of herring deliveries by statistical area and must provide accurate estimates of herring onboard tenders that have not yet delivered to the cannery. Inaccurate or untimely information could result in the closure of an area. Individual code sheets will be provided for each tender or processor that is required to report catches on a daily basis by radio. Each tender operator and buyer must register with the Department prior to fishing and will be given a packet containing regulations, statistical charts, etc.

Guideline Harvest Level

The 1989 sac-roe harvest should be the largest on record, exceeding the 1988 harvest by approximately 15%; approximately 2,415 tons are expected to be harvested. If recruitment is above average in several major stocks or if virgin stocks are exploited, the actual harvest may well exceed the GHL. If, however, recruitment is generally weak area-wide and/or adverse weather conditions prevail throughout the season the actual harvest may be significantly less than the GHL.

The listing in Table 1, "GUIDELINE HARVEST LEVELS BY MANAGEMENT UNIT" will be used as an aid in making in-season management decisions. These harvest levels are meant to reflect the status of each listed stock, however, some stocks lack the data base needed for adequate evaluation. Consequently, annual harvest levels for these stocks may fluctuate considerably until their status is more clearly understood. Again, all fishermen, pilots and processors are encouraged to provide the ADF&G management staff with any information or estimates on stock size they may accumulate either in-season or post-season.

TABLE 1
KODIAK HERRING SAC ROE FISHERY
GUIDELINE HARVEST LEVELS BY STOCK

STAT. AREA	MGMT. UNITS	1989 GUIDELINE HARVEST LEVEL	REQUIRED SPAWNING BIOMASS	
			@ 10% EXPLOITATION	@20% EXPLOITAT
<u>AFOGNAK DISTRICT</u>				
A010	Raspberry Sts.	55 TONS	550 Tons	275 Tons
A020	Malina Bay	30 TONS	300 Tons	150 Tons
A031	Paramanof Bay	40 TONS	400 Tons	200 Tons
A032	Foul Bay	30 TONS	300 Tons	150 Tons
A040	Devils Inlet	10 TONS	100 Tons	50 Tons
A040	Blue Fox	10 TONS	100 Tons	50 Tons
A050	Offshore W. Afog. 1/	-	1/	1/
A060	Shuyak Is.	20 TONS	200 Tons	100 Tons
A070	Perenosa Bay	15 TONS	150 Tons	75 Tons
A071	Delphin Bay	10 TONS	100 Tons	50 Tons --
A072	Seal Bay	10 TONS	100 Tons	50 Tons
A080	Tonki Bay	15 TONS	150 Tons	75 Tons
A090	Izhut Bay	25 TONS	250 Tons	125 Tons
A091	Kittoi Bay	15 TONS	150 Tons	75 Tons
A092	MacDonalds Lagoon	10 TONS	100 Tons	50 Tons
A100	Danger Bay	30 TONS	300 Tons	150 Tons
A101	Litnik	15 TONS	150 Tons	75 Tons
A102	Duck Bay	10 TONS	100 Tons	50 Tons
<u>District Totals</u>		<u>17</u>	<u>350 TONS</u>	<u>1,750 Tons</u>

STAT. AREA	MGMT. UNITS	1989 GUIDELINE HARVEST LEVEL	REQUIRED SPAWNING BIOMASS @10% EXPLOITATION	REQUIRED SPAWNING BIOMASS @20% EXPLOITATION
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UGANIK DISTRICT

UG10	Kupreanof	10 TONS	100 Tons	50 Tons
UG20	Viekoda	30 TONS	300 Tons	150 Tons
UG21	Terror	80 TONS	800 Tons	400 Tons
UG21	Uganik Is. Lagoon ^{2/}	CLOSED	<u>2/</u>	<u>2/</u>
UG30	Village Island	30 TONS	300 Tons	150 Tons
UG31	W. Uganik Pass	15 TONS	150 Tons	75 Tons
UG32	NE Arm Uganik	75 TONS	750 Tons	375 Tons
UG33	E. Arm Uganik	40 TONS	400 Tons	200 Tons
UG34	S. Arm Uganik	40 TONS	400 Tons	200 Tons
UG40	Offshore Uganik ^{1/}	-	<u>1/</u>	<u>1/</u>

District Totals	9	320 TONS	3,200 Tons	1,600 Tons
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UYAK DISTRICT

UY10	Offshore Uyak ^{1/}	-	<u>1/</u>	<u>1/</u>
UY20	Harvester Island	10 TONS	100 Tons	50 Tons
UY30	Inner Uyak	240 TONS	2,400 Tons	1,200 Tons
UY30	Browns Lagoon	20 TONS	200 Tons	100 Tons
UY31	Larsen Bay	10 TONS	100 Tons	50 Tons
UY40	Zachar Bay	100 TONS	1,000 Tons	500 Tons
UY50	Spiridon Bay	160 TONS	1,600 Tons	800 Tons

District Totals	6	540 TONS	5,400 Tons	2,700 Tons
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ALITAK DISTRICT

AL10	Outer Alitak	(Exploration)	<u>3/</u>	<u>3/</u>
AL20	Inner Alitak	(Exploration)	<u>3/</u>	<u>3/</u>
AL21	Deadman Bay	125 TONS	1,250 Tons	625 Tons
AL30	Sulua/Portage Bay	60 TONS	600 Tons	300 Tons
AL40	Lower Olga/Moser ^{4/}	15 TONS	150 Tons	75 Tons
AL40	No. Upper Olga B. ^{4/}	10 TONS		
AL50	So. Upper Olga B. ^{4/}	190 TONS	1,900 Tons	850 Tons
AL60	Geese/Twoheaded	(Exploration)	<u>3/</u>	<u>3/</u>

District Totals:	7	400 TONS	4,000 Tons	2,000 Tons
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STAT. AREA	MGMT. UNITS	1989 GUIDELINE HARVEST LEVEL	REQUIRED SPAWNING BIOMASS @10% EXPLOITATION	@20% EXPLOITATION
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STURGEON/HALIBUT DISTRICT

SH10	Sturgeon/Halibut	(Exploration)	3/	3/
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GENERAL DISTRICT

G010	Kaiugnak	10 TONS	100 Tons	50 Tons
G020	W. Sitkalidak St.	(Exploration)	3/	3/
G021	Barling	20 TONS	200 Tons	100 Tons
G022	E. Sitkalidak St.	95 TONS	950 Tons	475 Tons
G023	Tanginak Anchorage	15 TONS	150 Tons	75 Tons
G030	Outer Sitkalidak	(Exploration)	3/	3/
G040	Outer Kiliuda	(Exploration)	3/	3/
G041	Inner Kiliuda	10 TONS	100 Tons	50 Tons
G042	Shearwater	25 TONS	250 Tons	125 Tons
G050	Pasagshak	25 TONS	250 Tons	125 Tons
G050	Outer Ugak	(Exploration)	3/	3/
G051	Inner Ugak	50 TONS	500 Tons	250 Tons
G060	Womens Bay	110 TONS	1,100 Tons	550 Tons
G070	Monashka/Mill B.	(Exploration)	3/	3/
G080	Anton Larsen	30 TONS	300 Tons	150 Tons
G081	Sheratin	10 TONS	100 Tons	50 Tons
G090	Kizhuyak	110 TONS	1,100 Tons	550 Tons
G100	Kalsin Bay	20 TONS	200 Tons	100 Tons
G101	Middle Bay	25 TONS	250 Tons	125 Tons
G102	Inshore Chiniak	10 TONS	100 Tons	50 Tons
G103	Spruce Island	10 TONS	100 Tons	50 Tons

District Total	21	575 TONS	5,750 Tons	2,875 Tons
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MAINLAND DISTRICT

M010	North Mainland	(Exploration)	3/	3/
M020	Inner Kukak	50 TONS	500 Tons	250 Tons
M030	Outer Kukak ^{1/}	-	1/	1/
M040	Inner Missak	(Exploration)	3/	3/
M040	Outer Missak ^{1/}	-	1/	1/
M050	Inner Katmai	50 TONS	500 Tons	250 Tons

STAT. AREA	MGMT. UNITS	1989 GUIDELINE HARVEST LEVEL	REQUIRED SPAWNING BIOMASS @10% EXPLOITATION	@20% EXPLOITATION
MAINLAND DISTRICT (Continued)				
M060	Outer Katmai ^{1/}	-	1/	1/
M070	Alinchak	30 TONS	300 Tons	150 Tons
M080	Puale Bay	(Exploration)	3/	3/
M090	Portage Bay	(Exploration)	3/	3/
M100	Outer Portage ^{1/}	-	1/	1/
M110	Wide Bay	100 TONS	1,000 Tons	500 Tons
M120	Lower Shelikof	(Exploration)	3/	3/
District Total		230 TONS	2,300 Tons	1,150 Tons
GRAND TOTAL		2,415 TONS	24,150 Tons	12,075 Tons

^{1/}These are offshore management units which are not expected to yield herring of sac-roe quality. These units are more applicable to the food/bait fishery. (See Herring Food/Bait Fishery Management Plan.)

^{2/}The Uganik Lagoon Unit refers to all lagoons on Uganik Island. Spawning biomasses associated with these lagoons appear to have been reduced to less than 50 tons, thus all waters of the lagoons located on Uganik Island will be closed to commercial herring fishing effective at 12:00 Noon April 1 1989.

^{3/}Adequate biomass to justify an "exploratory" harvest; harvest will be required; the actual harvest should not exceed 20% of the available biomass.

^{4/}The following management units have been modified either in name or boundaries for the purpose of in-season management of the Olga/Moser Bay herring stocks. Each unit will be described by emergency order when closures are issued for these units.

- AL40 Lower Olga/Moser Unit: Formerly that portion of the Olga/Moser Bay Section south of the latitude of Stockholm Point.
- AL50 North Upper Olga Unit: Formerly that portion of the Olga/Moser Bay Section north of the latitude of Stockholm Point.
- AL50 South Upper Olga Unit: Formerly called the Upper Olga Bay Section.

KODIAK HERRING SAC-ROE FISHERY FISHERY SUMMARY BY YEAR AND BY GEAR

YEAR	SEASON LENGTH DAYS	TOTAL HARVEST	BY GEAR		PERCENT		LANDINGS		NO. UNITS		AVG. \$'S	
			SEINE	G/N	SEINE	G/N	SEINE	G/N	SEINE	G/N	SEINE	G/N
1979	36	1735	1457	278	84	16	-	-	57	125	38,347	3,333
1980	35	2383	2009	374	84	16	-	-	92	109	14,978	2,573
1981	48	2065	1596	469	77	23	207	406	79	114	14,402	3,471
1982	59	1771	1447	324	82	18	138	191	45	67	17,819	2,719
1983	51	2319	1797	522	78	22	164	284	41	64	35,061	6,520
1984	54	2163	1691	472	78	22	138	212	39	69	34,691	5,467
1985	59	1968	1244	724	63	37	118	348	34	81	32,935	8,039
1986	61	1558	1110	448	71	29	132	385	31	71	34,010	6,002
1987	61	2146	1591	554	74	26	122	411	29	62	54,872	8,945
1988	59	2171	1303	867	60	40	169	555	33	76	51,350	14,837
10 YEAR AVG.	52	2028	1525	503	75	25	148	349	48	84	32,847	6,191

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ACE 9279823

STATUS OF KODIAK SAC-ROE HERRING PERMITS

	<u>1987</u>	<u>1988</u>
G.N. Transferable	59	63
G.N. Non-Transferable	<u>48</u>	<u>41</u>
G.N. Total	107	104
G.N. Fished	62	76
Seine Transferable	40	45
Seine Non-Transferable	<u>26</u>	<u>24</u>
Seine Total	66	69
Seine Fished	29	33
<u>Totals</u>		
Transferable	99	108
Non-Transferable	<u>74</u>	<u>65</u>
Total	163	163
Fished	91	109

1989
HERRING SAC-ROE SEASON
ALASKA DEPARTMENT OF FISH AND GAME

KODIAK AREA MANAGEMENT STAFF

<u>Area Management Biologist</u>	<u>Asst. Area Management Biologist</u>
Larry Malloy	Dave Prokopowich

<u>Seasonal Management Biologist</u>	<u>Data Summary Technician</u>
Kevin Brennan	Joan Ried

<u>M/V Coho Crew</u>	<u>Herring Field Crew Personnel</u>	<u>Aircraft Pilots</u>	
Tom Emerson	Kim Rudge	Ed Sampson	Hal Terry
Dennis Gretsches	Leslie Scott	John Becker	Larry Nicholson
	Deb Robinson	Bruce MacIntosh	
	Tracy McKinion	Ed Hajdys	
	Mo Lambdin	Terry Kimball	

REGIONAL SUPERVISOR: Larry Nicholson

REGIONAL FINFISH COORDINATOR: Pete Probasco

1989

KODIAK MANAGEMENT AREA

COMMERCIAL HERRING REGULATIONS

- THESE REGULATIONS WERE COPIED FROM
TITLE 5, OCTOBER 1988 VERSION
- THESE REGULATIONS WILL BE IDENTICAL TO THE
REGULATIONS WHICH WILL APPEAR IN THE 1989
COMMERCIAL HERRING REGULATION BOOKLET WHEN
IT FINALLY BECOMES AVAILABLE.
- THE STATEWIDE PROVISIONS AND THE SELECTED
STATUTES ARE NOT INCLUDED WITH THE ATTACHED
COPY; THE 1988 COMMERCIAL HERRING REGULATION
BOOKLET CONTAINS BOTH OF THESE TYPES OF
REGULATIONS.

5 AAC 27.430 ALASKA ADMINISTRATIVE CODE 5 AAC 27.435

(b) Herring may be taken in the Eastern, Outer, Southern and Kamishak Bay districts from July 1 through February 28. During the period April 15 to June 30, the fishery will be opened and closed by emergency order. (In effect before 1987; am 3/29/87, Register 101)

Authority: AS 16.05.060
AS 16.05.251

5 AAC 27.430. GEAR. (a) In the Southern, Outer, Eastern and Kamishak Bay districts, herring may be taken only by purse seines from April 15 to June 30, and by seines, gill nets and trawls from July 1 through February 28.

(b) In the Northern and Central districts, herring may be taken only by gill nets from April 15 to June 30, except that in the Chinitna Bay subdistrict herring may only be taken by set gill nets.

(c) Herring pounds may be used from October 1 through April 15 under terms of a permit secured from the commissioner, or his authorized representative. (In effect before 1988)

Authority: AS 16.05.251(a)

5 AAC 27.431. GILL NET SPECIFICATIONS AND OPERATION. (a) No herring set gill net may exceed 35 fathoms in length. Each fisherman is allowed to operate 105 fathoms of set gill net in the aggregate.

(b) No person may operate a herring drift gill net that is more than 150 fathoms in length. (In effect before 1988)

Authority: AS 16.05.251(a)

5 AAC 27.432. SEINE SPECIFICATIONS AND OPERATION. During the period April 15 to June 30, no purse seine may be more than 1,000 meshes in depth or more than 150 fathoms in length. (In effect before 1988)

Authority: AS 16.05.251(a)

5 AAC 27.434. IDENTIFICATION OF GEAR. Set gill nets used to take herring must have a key or buoy at one end and must be plainly and legibly marked with the fisherman's five digit CFEC permit serial number and his initials. (In effect before 1982; am 4/14/82, Register 82)

Authority: AS 16.05.251(a)

5 AAC 27.435. MINIMUM DISTANCE BETWEEN UNITS OF GEAR. No set gill net may be set or operated within 600 feet of

5 AAC 27.450 FISH AND GAME 5 AAC 27.462

another set gill net, except that this provision does not apply in the Chinitna Bay subdistrict. (In effect before 1988)

Authority: AS 16.05.251(a)

5 AAC 27.450. WATERS CLOSED TO HERRING FISHING. (a) Herring may not be taken in any waters listed in 5 AAC 21.350(a)-(c).

(b) Herring may not be taken in the Resurrection Bay small boat harbor from April 16 through September 30. (In effect before 1988)

Authority: AS 16.05.251(a)

5 AAC 27.460. GUIDELINE HARVEST LEVELS. Repealed 5/11/85.

Authority: AS 16.05.251

5 AAC 27.462. BUYER REPORTING REQUIREMENTS. In addition to the requirements of 5 AAC 39.130(f), each buyer or buyer's agent operating in the Southern, Kamishak Bay, Barren Island, Outer, and Eastern Districts, shall report in person to, and register with, a local representative of the department before commencing operations. Each buyer shall

(1) identify and describe all vessels to be employed in transporting or processing herring;

(2) report daily all herring purchased from fishermen, or other processing records, as specified by a department representative; and

(3) submit fish tickets before departure from the area and no later than 10 days after termination of buying operations in the area, or as otherwise specified by a local representative of the department. (Eff. 5/11/85, Register 94)

Authority: AS 16.05.251

Article 8. Statistical Area K—Kodiak Area

Section	Section
500. Description of areas	530. Waters closed to herring fishing
505. Description of districts, sections, and subsections	531. (Repealed)
510. Fishing seasons and periods	532. (Repealed)
515. Gear	535. Harvest strategies
520. Gill net specifications and operations	536. Size limits
525. Seine specifications and operations	540. Buyer and tender reporting requirements

5 AAC 27.500. DESCRIPTION OF AREAS. (a) Statistical area K includes all waters of Alaska south of a line extending east from Cape Douglas (58° 52' N. lat.), west of 150° W. long., north of 55° 30' N. lat., and east of a line extending south from the southern entrance of Imuya Bay near Kilokak Rocks (156° 20' 13" W. long.).

(b) Repealed 4/15/81. (In effect before 1988)

Authority: AS 16.03.251(a)

5 AAC 27.505. DESCRIPTION OF DISTRICTS AND SECTIONS. (a) Afognak district: all waters north of a line from Occident Point (57° 57' 25" N. lat., 152° 51' 30" W. long.) to Last Timber Point (57° 58' 50" N. lat., 152° 58' 55" W. long.), north of a line extending west on the latitude of Raspberry Cape (58° 03' 35" N. lat.) to midstream of Shelikof Strait, east of midstream of Shelikof Strait, west of a line from Dolphin Point (57° 59' 10" N. lat., 152° 43' 25" W. long.) to Cape Izhut (58° 06' 10" N. lat., 152° 20' 20" W. long.) to Pillar Cape (58° 09' N. lat., 152° 08' 40" W. long.) and north of the latitude of Pillar Cape;

(1) Raspberry Straits section: all waters of Raspberry Straits encompassed by a line extending from Raspberry Cape (58° 03' 35" N. lat., 153° 25' W. long.) to Steep Cape (58° 12' N. lat., 153° 12' 30" W. long.) and by lines from Head Point (57° 59' 40" N. lat., 152° 46' 10" W. long.) from Occident Point (57° 57' 25" N. lat., 152° 51' 30" W. long.) to Last Timber Point (57° 58' 50" N. lat., 152° 58' 55" W. long.);

(2) Malina Bay section: all waters of Malina Bay east of a line from Steep Cape (58° 12' N. lat., 153° 12' 30" W. long.) to Cape Paramanof (58° 18' 20" N. lat., 153° 03' 30" W. long.);

(3) Paramanof Bay section: all waters of Paramanof Bay and Foul Bay east of a line from Cape Paramanof (58° 18' 20" N. lat., 153° 03' 30" W. long.) to Steep Cape (58° 12' N. lat., 153° 12' 30" W. long.);

(A) Paramanof Bay Subsection: all waters of Paramanof Bay east of a line from Cape Paramanof (58° 18' 20" N. lat., 153° 03' 30" W. long.) to the westernmost tip of Ban Island and south of the latitude of the southernmost tip of Ban Island;

(B) Foul Bay Subsection: all waters of Foul Bay east of a line from the westernmost tip of Ban Island to Black Cape (58° 24' 30" N. lat., 152° 53' W. long.);

(4) Bluefox Bay section: all waters encompassed by a line from Cape Paramanof (58° 18' 20" N. lat., 153° 03' 30" W. long.) to Cape Newland (58° 30' 30" N. lat., 152° 53' W. long.) and by the longitude of Cape Currant (152° 29' 10" W. long.) north to Shuyak Island;

(5) Offshore West Afognak section: all waters encompassed by lines extending west along the latitudes of Raspberry Cape (58° 03' 35" N. lat.) and Cape Newland (58° 30' 30" N. lat.) to midstream of

Shelikof Strait, and by lines from Raspberry Cape to Steep Cape to Cape Paramanof to Cape Newland;

(6) Shuyak Island section: all waters north of the latitude of Cape Newland, west of the longitude of Cape Currant, and north of a line from Cape Currant to Tolstoi Point (58° 23' 45" N. lat., 152° 07' 30" W. long.), to Tonki Cape (58° 21' N. lat., 151° 59' W. long.) and north of the latitude of Pillar Cape (58° 09' N. lat.);

(7) Perenosia-Seal Bays section: all waters of Perenosia Bay and Seal Bay south of a line from Cape Currant to Tolstoi Point

(A) Delphin Bay Subsection: all waters of Delphin Bay south and west of a line from Delphin Point (58° 22' 20" N. lat., 152° 26' 10" W. long.) to Cape Currant;

(B) Perenosia Bay Subsection: all waters of Perenosia Bay south of a line from Cape Currant to Posledni Point, excluding the Delphin Bay Subsection;

(C) Seal Bay Subsection: all waters of Seal Bay south of a line from Posledni Point to Tolstoi Point;

(8) Tonki Bay section: all waters of Tonki Bay south of a line from Tolstoi to Tonki Cape;

(9) Izhut Bay section: all waters of Izhut and Kitoi bays north of a line from Pillar Cape (58° 09' N. lat., 152° 06' 40" W. long.) to Cape Izhut (58° 06' 10" N. lat., 152° 20' 20" W. long.)

(A) Izhut Bay Subsection: all waters of Izhut Bay north of 58° 10' 39" N. lat.;

(B) Kitoi Bay Subsection: all waters of Kitoi Bay west of a line from 58° 10' 39" N. lat., 152° 17' 13" W. long. to 58° 09' 32" N. lat., 152° 18' 36" W. long.;

(C) MacDonalds Lagoon Subsection: all waters of Izhut Bay bounded by 58° 10' 39" N. lat., the eastern boundary of the Kitoi Bay Subsection, and a line from Cape Izhut to Pillar Cape;

(10) Danger Bay section: all waters north of a line from Cape Izhut to Dolphin Point (57° 59' 10" N. lat., 152° 46' 10" W. long.)

(A) Danger Bay Subsection: all waters of Danger Bay north of a line from Cape Kazakof (58° 04' 40" N. lat., 152° 37' 40" W. long.) to Cape Kostromitinof (58° 05' 05" N. lat., 152° 32' 30" W. long.);

(B) Litnik Subsection: all waters of Afognak Bay enclosed by a line from Head Point to Dolphin Point and the longitude of Dolphin Point;

(C) Inshore Marmot Subsection: all waters of Marmot Bay enclosed by a line from Cape Izhut to Dolphin Point, by the longitude of Dolphin Point, and by a line from Cape Kazakof to Cape Kostromitinof.

(b) Uganik Bay District: all waters north of the latitude of Cape Kuliuk (57° 48' 10" N. lat.) to midstream Shelikof Strait, and south of the latitude of Raspberry Cape to midstream Shelikof Strait, east of midstream Shelikof Strait, and including the waters of Kupreanof

Strait west of a line from Inner Point (57° 54' 06" N. lat., 152° 47' 40" W. long.) to Bird Point (57° 55' 20" N. lat., 152° 47' 25" W. long.) and south of a line from Occident Point (57° 57' 26" N. lat., 152° 51' 30" W. long.) to Last Timber Point (57° 58' 50" N. lat., 152° 58' 55" W. long.);

(1) Kupreanof section: all waters encompassed by a line from Raspberry Cape to Outlet Cape (57° 59' 55" N. lat., 153° 17' W. long.) and by lines from Inner Point to Bird Point and from Occident Point to Last Timber Point;

(2) Terror-Vickoda Section: all waters enclosed by a line from Raspberry Cape to Cape Uganik, from Raspberry Cape to Outlet Cape (57° 59' 55" N. lat., 153° 17' W. long.) and in West Uganik Passage, east of a line at 153° 15' 42" W. long.;

(A) Vickoda Bay Subsection: all waters of Inner Vickoda Bay east of the longitude of Naugolka Point (57° 33' 30" N. lat., 152° 13' 40" W. long.);

(B) Terror Bay Subsection: all waters of Terror Bay and Outer Vickoda Bay enclosed by lines from Raspberry Cape to Cape Uganik and from Raspberry Cape to Outlet Cape, and all waters of West Uganik Passage east of 153° 15' 42" W. long.;

(3) Inner Uganik Section: all waters of Uganik Bay south of a line from Cape Uganik to Cape Ugat (57° 52' 20" N. lat., 153° 50' 40" W. long.) and in West Uganik Passage, west of a line at 153° 15' 42" W. long.;

(A) Village Islands Subsection: all waters of Uganik Bay south of a line from Cape Ugat to Cape Uganik (57° 52' 20" N. lat., 153° 50' 40" W. long.), west of lines from Cape Uganik to East Point (57° 50' 30" N. lat., 153° 28' 30" W. long.) and from East Point to Rock Point at 57° 46' 25" N. lat., 153° 29' 10" W. long., and north of the latitude of Packer's Spit (57° 44' 30" N. lat.);

(B) West Uganik Pass Subsection: all waters of West Uganik Passage west of 153° 15' 42" W. long. and east of a line from Cape Uganik to East Point;

(C) Northeast Arm Uganik Subsection: all waters of the northeast arm of Uganik Bay east of a line from East Point to Rock Point;

(D) East Arm Uganik Subsection: all waters of Mush Bay and that portion of Inner Uganik Bay south of the latitude of Packer's Spit (57° 44' 30" N. lat.), and north of the latitude of Mink Point (57° 43' N. lat.);

(E) South Arm Uganik Subsection: all waters of the south arm of Uganik Bay south of the latitude of Mink Point;

(4) Outer Uganik section: all waters south of the latitude of Raspberry Cape, north of the latitude of Cape Kuliuk, east of midstream of Shelikof Strait and west of a line from Cape Uganik to Cape Ugat (57° 52' 20" N. lat., 153° 50' 40" W. long.).

(c) Uyak district: all waters south of the latitude of Cape Kuliuk to midstream of Shelikof Strait and north of the latitude of Cape Karluk to midstream of Shelikof Strait, and east of midstream of Shelikof Strait and including all of Uyak Bay;

(1) Offshore Uyak Section: all waters of the latitude of Cape Kuliuk to midstream Shelikof Strait and north of the latitude of Cape Karluk (57° 34' 42" N. lat.) to midstream Shelikof Strait, east of midstream Shelikof Strait, and west of a line from Cape Kuliuk to Cape Karluk;

(2) Harvester Island Section: all waters north of the latitude of Carlsen Point (57° 34' 48" N. lat.) west of 153° 50' W. long. and south of a line from Cape Kuliuk to Cape Karluk;

(3) Inner Uyak Bay section: all waters south of the latitude of Carlsen Point;

(A) Larsen Bay Subsection: all waters of Larsen Bay west of 153° 58' 12" W. long.;

(B) Inner Uyak Bay Subsection: all waters of Inner Uyak Bay south of the latitude of Carlsen Point, excluding the Larsen Bay Subsection;

(4) Zachar Bay section: all waters of Zachar Bay east of 153° 50' W. long.;

(5) Spiridon Bay section: all waters of Spiridon Bay east of 153° 50' W. long.;

(d) Sturgeon-Halibut Bay District: all waters south of the latitude of Cape Karluk to midstream Shelikof Strait and north of the latitude of Cape Ikolik (57° 17' 26" N. lat.) to midstream of Shelikof Strait and east of midstream Shelikof Strait and including all bays from Cape Ikolik to Cape Karluk.

(e) Alitak Bay district: all waters east of the longitude of Cape Ikolik, west of the longitude of Black Point (153° 18' W. long.), south of the latitude of Black Point (57° N. lat.) to Cape Kiavak (57° N. lat., 153° 33' W. long.);

(1) Outer Alitak Bay Section: all waters east of the longitude of Cape Ikolik, west of the longitude of Black Point and west of a line from Cape Trinity (56° 44' 50" N. lat., 154° 08' 45" W. long.) to the westernmost tip of Aiaktalik Island, and south of a line from Black Point to the northernmost tip of Twoheaded Island, from the southernmost tip of Twoheaded Island to the easternmost tip of Aiaktalik Island, and from Cape Trinity to Cape Alitak (56° 56' 40" N. lat., 154° 18' W. long.);

(2) Inner Alitak Bay section: all waters north of a line from Cape Trinity to Cape Alitak, south of the latitudes of Cape Hephurn (56° 07' 30" N. lat.) and Bun Point (56° 58' 25" N. lat.), including the waters of Deadman Bay;

(A) Inner Alitak Bay Subsection: all waters enclosed by a line from Cape Alitak to Cape Trinity, south of the latitude of Cape

Hepburn (56° 07' 30" N. lat., 154° 06' 30" W. long.) in Sulua and Portage Bays, south of a line from Cape Hepburn to Bun Point, and south of the latitude of Bun Point in Moser Bay;

(B) Deadman Bay Subsection: all waters of Deadman Bay north of a line from Cape Hepburn to Bun Point;

(3) Sulua-Portage section: all waters of Sulua and Portage bays north of the latitude of Cape Hepburn;

(4) Lower Olga-Moser Bay Section: all waters of Lower Olga and Moser Bays encompassed by a line from Stockholm Point (57° 07' 40" N. lat., 154° 06' 36" W. long.) to the terminus of Silver Salmon Creek (No. 257-303) and the latitude of Bun Point;

(5) Upper Olga Bay section: all waters of Upper Olga Bay south of a line from Stockholm Point to the terminus of Silver Salmon Creek (no. 257-303);

(6) Gease-Twoheaded section: all waters encompassed by lines from Cape Trinity to the westernmost tip of Aiaktalik Island, from the easternmost tip of Aiaktalik Island to the southernmost tip of Twoheaded Island, from the northernmost tip of Twoheaded Island to Black Point and south of the latitude of Black Point to Cape Kiavak.

(f) General district: all waters north of the latitude of Black Point to Kodiak Island, east of the longitude of Black Point and east of lines from Pillar Cape to Cape Izhut, from Cape Izhut to Dolphin Point and from Bird Point to Inner Point, and south of the latitude of Pillar Cape;

(1) Kaiugnak Section: all waters of West Sitkalidak Straits and associated bays south of the latitude of Cape Kaisak and north of a line from Black Point to Cape Kiavak;

(2) Inner Sitkalidak Section: all waters encompassed by the longitude of Old Harbor and by lines from Cape Barnabas (59° 09' N. lat., 152° 53' W. long.) to Dangerous Cape (57° 16' 36" N. lat., 152° 42' 18" W. long.) and from Dangerous Cape to Left Cape (57° 15' 30" N. lat., 152° 57' W. long.);

(A) Tanginak Anchorage Subsection: all waters of MacDonald Lagoon and Tanginak Anchorage south of the latitude of Lagoon Point (57° 11' 16" N. lat., 153° 04' W. long.);

(B) East Sitkalidak Subsection: all waters of East Sitkalidak Straits and associated bays enclosed by a line from Left Cape (57° 15' 30" N. lat., 152° 57' W. long.) to Cape Barnabas (59° 09' N. lat., 152° 53' W. long.) and the latitude of Old Harbor (57° 12' 15" N. lat.);

(C) West Sitkalidak Subsection: all waters of West Sitkalidak Straits and associated bays south of the latitude of Old Harbor and north of the latitude of Cape Kaslak, excluding the Barling Bay Subsection;

(D) Barling Bay Subsection: all waters of Barling Bay west of a line from Old Harbor to Barling Spit (57° 10' 15" N. lat.);

(3) Outer Sitkalidak section: all waters east of the longitude of Black Point, south of the latitude of Narrow Cape and east of lines from Cape Barnabas to Dangerous Cape and from Dangerous Cape to Narrow Cape;

(4) Kiliuda Bay section: all waters of Kiliuda Bay and Boulder Bay north of a line from Left Cape to Dangerous Cape;

(A) Shearwater Subsection: all waters of Shearwater Bay east of a line from Shearwater Point (57° 20' N. lat., 152° 58' W. long.) to Pillar Point (57° 19' 15" N. lat., 152° 54' 30" W. long.);

(B) Outer Kiliuda Subsection: all waters of Outer Kiliuda, Santa Flavia, and Boulder bays enclosed by a line from Dangerous Cape to Cape Barnabas to Left Cape to Shearwater Point;

(C) Inner Kiliuda Subsection: all waters of Inner Kiliuda Bay west of a line from Left Cape to Shearwater Point;

(5) Ugak Bay section: all waters of Ugak Bay north of a line from Dangerous Cape to Narrow Cape;

(A) Inner Ugak Subsection: all waters of Ugak Bay west of 152° 49' W. long.;

(B) Outer Ugak Subsection: all waters of Ugak Bay east of 152° 49' W. long. and north and west of a line from Dangerous Cape to Narrow Cape;

(6) Women's Bay section: all waters of Women's Bay west of a line from Cliff Point (57° 43' 30" N. lat., 152° 26' 45" W. long.) to the terminus of Buskin River (no. 259-211);

(7) Monashka-Mill Bay Section: all waters of Monashka Bay and Mill Bay west of a line from Termination Point (57° 51' 15" N. lat., 152° 24' W. long.) to Spruce Cape (57° 49' 36" N. lat., 152° 19' 24" W. long.);

(8) Anton-Sharatin Bays section: all waters of Anton Larsen Bay and Sharatin Bay south of a line from Kizhuyak Point (57° 55' 15" N. lat., 152° 36' 30" W. long.) to Kekur Point (57° 51' 30" N. lat., 152° 47' W. long.);

(A) Anton Larsen Bay Subsection: all waters of Anton Larsen Bay south of a line from Kizhuyak Point (57° 55' 15" N. lat., 152° 36' 30" W. long.) to Crag Point (57° 52' 45" N. lat., 152° 40' 25" W. long.);

(B) Sharatin Bay Subsection: all waters of Sharatin Bay south of a line from Crag Point to Kekur Point (57° 51' 30" N. lat., 152° 47' W. long.);

(9) Kizhuyak Bay Section: all waters of Kizhuyak Bay west of a line from Kekur Point to Inner Point (57° 54' 06" N. lat., 152° 47' 40" W. long.);

(10) Inshore Marmot-Chiniak section: all waters encompassed by lines from Cape Chiniak (57° 37' N. lat., 152° 10' W. long.) to Pillar

Cape, from Pillar Cape to Cape Izhut, from Cape Izhut to Dolphin Point and from Bird Point to Inner Point;

(A) Kalsin Bay Subsection: all waters of Kalsin Bay south and west of a line from Cape Chiniak to Broad Point;

(B) Middle Bay Subsection: all waters of Middle Bay south and west of a line from Broad Point to Cliff Point;

(C) Inshore Chiniak Subsection: all waters of Chiniak Bay enclosed by lines from Cape Chiniak to Broad Point to Cliff Point to the terminus of Buskin River (No. 259-211), and from Spruce Cape to Pillar Cape to Cape Chiniak;

(D) Spruce Island Subsection: all waters of Marmot Bay and adjacent bays and islands enclosed by a line from Spruce Cape to Pillar Cape to Cape Izhut to Dolphin Point to Inner Point to Kekur Point to Crag Point to Kizhuyak Point;

(11) Offshore Marmot-Chiniak section: all waters east of a line from Pillar Cape to Cape Chiniak, south of the latitude of Pillar Cape and north of the latitude of Narrow Cape.

(g) Mainland District: all waters south of the latitude of Cape Douglas; west of midstream Shelikof Strait; south of the latitude of Cape Ikolik west to midstream of Shelikof Strait, west of the longitude of Cape Ikolik and east of the longitude of Kilokak Rocks (57° 11' 22" N. lat., 156° 20' 13" W. long.);

(1) North Mainland section: all waters south of the latitude of Cape Douglas and to midstream of Shelikof Strait; and north of the latitude of Cape Nukshak and east to midstream of Shelikof Strait and west of midstream of Shelikof Strait;

(2) Inner Kukuk section: all the waters west of a line from Cape Nukshak (58° 23' 30" N. lat., 153° 58' 45" W. long.) and Cape Gull (58° 13' N. lat., 154° 08' 30" W. long.);

(3) Outer Kukuk section: all waters encompassed by a line from Cape Nukshak to Cape Gull, east of the latitude of Cape Nukshak to midstream of Shelikof Strait, east of the latitude of Cape Gull to midstream of Shelikof Strait, and by a line midstream of Shelikof Strait;

(4) Misak section: all waters south of the latitude of Cape Gull east to midstream of Shelikof Strait and north of the latitude of Cape Iktugitak to midstream of Shelikof Strait;

(5) Inner Katmai Section: all waters west of a line from Cape Iktugitak (58° 01' 15" N. lat., 154° 34' 45" W. long.) to Cape Kubugakli (57° 53' 30" N. lat., 155° 03' 35" W. long.);

(6) Outer Katmai section: all waters encompassed by the latitude of Cape Iktugitak east to midstream of Shelikof Strait, the latitude of Cape Kekurnoi east to midstream of Shelikof Strait, west of midstream of Shelikof Strait, east of lines from Cape Iktugitak to Cape Kubugakli and from Cape Kubugakli to Cape Kekurnoi (57° 43' 30" N. lat., 155° 07' 50" W. long.);

(7) Alinchak section: all waters west of a line from Cape Kubugakli to Cape Kekurnoi;

(8) Puale Bay section: all waters west of a line from Cape Kekurnoi to Cape Unalishagvak (57° 32' 45" N. lat., 155° 43' 40" W. long.);

(9) Portage Bay Section: all waters west of a line from Cape Unalishagvak to Cape Igvak (57° 26' N. lat., 156° 01' W. long.);

(10) Outer Portage-Puale section: all waters south of the latitude of Cape Kekurnoi east to midstream of Shelikof Strait, north of the latitude of Cape Igvak east to midstream of Shelikof Strait, west of midstream of Shelikof Strait or east of lines from Cape Kekurnoi to Cape Unalishagvak and from Cape Unalishagvak to Cape Igvak;

(11) Wide Bay section: all waters west of a line from Cape Igvak to Kilokak Rocks;

(12) Lower Shelikof section: all waters east of the longitude of Kilokak Rocks, west of the longitude of Cape Ikolik, south of the latitude of Cape Igvak, west to midstream of Shelikof Strait and south of the latitude of Cape Ikolik and east to midstream of Shelikof Strait. (In effect before 1985; am 5/11/85, Register 94; am 6/2/88, Register 106; am 7/23/88, Register 107)

Authority: AS 16.05.251

5 AAC 27.510. FISHING SEASONS AND PERIODS. (a) Herring may be taken from April 15 through June 30 (sac roe season) and from August 1 through February 28 (food and bait season).

(b) Herring may be taken only during periods established by emergency order. (In effect before 1982; am 4/14/82, Register 82; am 5/11/85, Register 94)

Authority: AS 16.05.060
AS 16.05.251

5 AAC 27.515. GEAR. (a) Herring may be taken only by seines, gill nets and trawls, except that beach seines and trawls may not be used to take herring during the sac roe season.

(b) A herring fishing vessel may operate or assist in operating, or have aboard it, only one legal limit of herring fishing gear in the aggregate, except that a herring fishing vessel may tow or transport other herring fishing vessels containing those vessels own gear.

(c) Unhung gear sufficient for mending purposes may be carried aboard fishing vessels.

(d) A purse seine, hand purse seine or beach seine may not be fished simultaneously with gill net gear by any person or vessel

(e) Herring fishing nets shall be measured, either wet or dry, by determining the maximum length of cork line when the net is fully extended with traction applied at one end only.

5 AAC 27.520 ALASKA ADMINISTRATIVE CODE 5 AAC 27.525

(f) The interim-use or entry permit holder is responsible for operation of the net.

(g) The use of lands with any net gear used for commercial herring fishing is prohibited during the herring sac roe season. (In effect before 1982; am 4/14/82, Register 82; am 6/2/88, Register 106)

Authority: AS 16.05.251

5 AAC 27.520. GILL NET SPECIFICATIONS AND OPERATIONS. (a) The aggregate length of herring gill nets in use by any herring CFEC permit holder may not exceed 150 fathoms.

(b) The interim use or entry permit holder must be physically present while the gill net is being fished.

(c) Each drift gill net in operation must have a buoy at one end and the opposite end must be attached to the fishing vessel. Each set gill net in operation must be anchored and buoyed at both ends. All buoys must be at least 10 inches in diameter and all buoys used on an individual gill net must be of the same color. Each buoy must be plainly and legibly marked with the permanent vessel license plate number (ADF&G number) of the vessel operating the gear. The buoy may bear only a single number, and this number must be that of the vessel used in operating the gear. The number must be painted on the top one-third of the buoy in numerals at least four inches in height, one-half inch in width, and in a color contrasting to that of the buoy. The buoy markings must be visible on the buoy above the water surface. Set gill nets must have a buoy spaced every 25 fathoms along the net and the buoys must be floating on the surface of the water.

(d) Herring gill nets may remain in the water two hours after the announced closing time for any opening of three hours or less fishing time. No herring gill nets may be reset after a closure time. Herring gill nets may remain in the water two hours after an emergency order closure if that closure is announced by the department less than three hours before the closure time. (In effect before 1982; am 4/14/82, Register 82; am 5/11/85, Register 94; am 6/2/88, Register 106)

Authority: AS 16.05.261

5 AAC 27.525. SEINE SPECIFICATIONS AND OPERATIONS. (a) No purse seine may be more than 1,000 meshes in depth or more than 100 fathoms in length.

(b) Repealed 4/14/82.

(In effect before 1982; am 4/14/82, Register 82; am 5/11/85, Register 94)

Authority: AS 16.05.261

5 AAC 27.530

FISH AND GAME

5 AAC 27.540

5 AAC 27.530. WATERS CLOSED TO HERRING FISHING.

(a) During the period June 12 through October 31, herring may not be taken in waters described in 5 AAC 18.350 and 5 AAC 39.290.

(b) From April 15 through June 12, herring may not be taken in the following waters:

(1) Brown's Lagoon; in the Lagoon;

(2) Women's Bay: all waters enclosed by a line from Shannon's Point (58° 43' 48" N. lat., 152° 31' 36" W. long.) to Nymans Peninsula (57° 43' 18" N. lat., 152° 31' 24" W. long.). (In effect before 1982; am 4/14/82, Register 82; am 6/2/88, Register 106)

Authority: AS 16.05.261

5 AAC 27.531. GILL NET SPECIFICATIONS AND OPERATION. Repealed 4/15/81.

5 AAC 27.532. SEINE SPECIFICATIONS AND OPERATION. Repealed 4/15/81.

5 AAC 27.535. HARVEST STRATEGIES. (a) The department shall manage the herring food/bait fishery so that the food/bait harvest does not exceed 10 percent of the actual herring sac roe harvest in the previous season.

(b) Repealed 5/31/85.

(c) The department shall manage the herring food/bait fishery that is directed on Kamishak spawning stocks overwintering in the eastern Shelikof Straits so that the food/bait harvest does not exceed 2 percent of the total biomass of Kamishak stocks, as determined by the department during the most recent Kamishak herring sac roe season. (In effect before 1982; am 4/14/82, Register 82; am 5/11/85, Register 94; am 5/31/85, Register 94; am 6/2/88, Register 106)

Authority: AS 16.05.060
AS 16.05.261

5 AAC 27.536. SIZE LIMITS. No CFEC herring seine permit holder may sell or have aboard a vessel any herring that were taken during the herring sac roe season if the number of individual herring per 50 pounds of net weight exceeds 250 fish. (Eff. 6/2/88, Register 106)

Authority: AS 16.05.261

5 AAC 27.540. BUYER AND TENDER REPORTING REQUIREMENTS. In addition to the requirements of 5 AAC 39.130(a) each tender operator and each buyer or his agents shall report in person to and register with a local representative of the department

upon arrival in the statistical area before commencing operations and before changing location of the operation. Each buyer shall

(1) identify all vessels to be employed in transporting or processing herring and shall register such vessels with a local representative of the department located in the statistical area before transporting or processing herring;

(2) make daily reports of all herring purchased from fishermen and other processing records as specified by a local representative of the department; and

(3) submit fish tickets before departure from the area and no later than 10 days after termination of buying operations in the area, or as otherwise specified by a local representative of the department. (In effect before 1988)

Authority: AS 16.05.251(a)
AS 16.05.690

Article 9. Statistical Area L — Chignik Area

Section	Section
550 Description of area	575. Seine specifications and operations
555 Description of districts	580. Waters closed to herring fishing
560 Fishing seasons and weekly fishing periods	590. Buyer and tender reporting requirements
565 Gear	

5 AAC 27.550. DESCRIPTION OF AREA. Statistical area L includes all waters on the south side of the Alaska Peninsula enclosed by 156° 20' 13" W. long (the longitude of the southern entrance to Imuya Bay near Kilokuk Rocks) and a line extending southeast (135°) from the southernmost tip of Kupreanof Point. (In effect before 1988)

Authority: AS 16.05.251(a)

5 AAC 27.555. DESCRIPTION OF DISTRICTS. Districts are as described in 5 AAC 15.200. (In effect before 1988)

Authority: AS 16.05.251(a)

5 AAC 27.560. FISHING SEASONS AND WEEKLY FISHING PERIODS. (a) Herring may be taken from April 15 through June 30 (roe season) and from August 15 through February 28 (food and bait season).

(b) Herring may be taken only during periods established by emergency order. (In effect before 1982; am 4/14/82, Register 82)

Authority: AS 16.05.060
AS 16.05.251(a)

5 AAC 27.565. GEAR. (a) Herring may be taken only by purse seines.

(b) A herring fishing vessel may operate or assist in operating only one legal limit of herring fishing gear in the aggregate.

(c) Unhung gear sufficient for mending purposes may be carried aboard fishing vessels.

(d) Herring fishing nets shall be measured, either wet or dry, by determining the maximum length of cork line when the net is fully extended with traction applied at one end only.

(e) The interim-use or entry permit holder is responsible for operation of the net.

(f) The use of leads with any net gear used for commercial herring fishing is prohibited during the herring sac roe season. (In effect before 1982; am 4/14/82, Register 82)

Authority: AS 16.05.251(a)

5 AAC 27.575. SEINE SPECIFICATIONS AND OPERATIONS. No purse seine may be more than 1,000 meshes in depth or more than 100 fathoms in length. (In effect before 1988)

Authority: AS 16.05.251(a)

5 AAC 27.580. WATERS CLOSED TO HERRING FISHING. During the period June 12 through October 31, herring may not be taken in waters described in 5 AAC 15.350 and 5 AAC 39.290. (In effect before 1988)

Authority: AS 16.05.251(a)

5 AAC 27.590. BUYER AND TENDER REPORTING REQUIREMENTS. In addition to the requirements of 5 AAC 39.130(f), each tender operator and each buyer or his agents shall report in person to and register with a local representative of the department upon arrival in the statistical area before commencing operations and before changing location of the operation. Each buyer shall

(1) identify all vessels to be employed in transporting or processing herring and shall register such vessels with a local representative of the department located in the statistical area before transporting or processing herring;

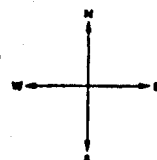
(2) make daily reports of all herring purchased from fishermen, and other processing records as specified by a local representative of the department; and

(3) submit fish tickets before departure from the area and no later than 10 days after termination of buying operations in the

KODIAK AREA HERRING STATISTICAL CHART

REVISED 1 MARCH 1985

THIS CHART IS PRINTED AS A COURTESY BY A.D.F. & G. AND IS INTENDED PRIMARILY AS A GUIDE FOR FISHERMEN AND INDUSTRY PERSONNEL TO USE WHEN REPORTING ON FISH TICKETS THE CORRECT STATISTICAL CATCH AREAS FOR EACH COMMERCIAL HERRING DELIVERY. FOR EXACT DESCRIPTIONS OF DISTRICTS AND SUBSECTIONS, CONSULT THE CURRENT ISSUE OF THE ALASKA COMMERCIAL FISHING REGULATIONS FOR HERRING.



MAINLAND DISTRICT

- M010 NORTH MAINLAND
- M020 INNER KUKAK
- M030 OUTER KUKAK
- M040 MISSAK
- M050 INNER KATHAI
- M060 OUTER KATHAI
- M070 ALINCHAK
- M080 PAULIE BAY
- M090 PORTAGE BAY
- M100 OUTER PORTAGE BAY
- M110 WIDE BAY
- M120 LOWER SHELINOF

UGANIK DISTRICT

- UG10 KUPREANOF
- UG20 VIKODA
- UG21 TERROR
- UG30 VILLAGE ISLANDS
- UG31 N. UGANIK PASS
- UG32 NE. ARM UGANIK
- UG33 E. ARM UGANIK
- UG34 S. ARM UGANIK
- UG40 OFFSHORE UGANIK

UYAK DISTRICT

- UY10 OFFSHORE UYAK
- UY20 HARVESTOR ISLAND
- UY30 INNER UYAK
- UY31 LARSEN BAY
- UY40 ZACHAR BAY
- UY50 SPIRITON BAY

STURGEON/HALIBUT DISTRICT

- SH10 NO SUBSECTIONS

ALITAK DISTRICT

- AL10 OUTER ALITAK

AFOONAK DISTRICT

- A010 RASPBERRY STRAITS
- A020 MALINA BAY
- A031 PARAMANOF BAY
- A032 POLI BAY
- A040 BLUE FOX
- A050 OFFSHORE WEST, AFOONAK
- A060 SHUYAK ISLAND
- A070 PERENOSA BAY
- A071 DELPHIN BAY
- A072 SEAL BAY
- A080 TORNI BAY
- A090 IZHOI BAY
- A091 KITOI BAY
- A092 McDONALDS LAGOON
- A100 DANGER BAY
- A101 LITNIK
- A102 INSHORE MARMOT

GENERAL DISTRICT

- G010 KATUKAK
- G020 W. SITKALIDAK STRAITS
- G021 BAREING
- G022 E. SITKALIDAK STRAITS
- G023 TANGINAK ANCHORAGE
- G030 OUTER SITKALIDAK
- G040 OUTER KILIUDA
- G041 INNER KILIUDA
- G042 SHEARWATER
- G050 OUTER UGAK
- G051 INNER UGAK
- G060 WOMEN'S BAY
- G070 MONASHKA/HILLBAY
- G080 ANTON LARSEN
- G081 SHERATIN
- G090 KIZHUYAK
- G100 KALSHIN BAY
- G101 MIDDLE BAY
- G102 INSHORE CHINTAK
- G103 SPRUCE ISLAND

1989/90
HARVEST STRATEGY FOR THE KODIAK MANAGEMENT AREA
COMMERCIAL FOOD/BAIT HERRING FISHERY

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Regional Information Report¹ No 4K89- 26

Alaska Department of Fish and Game
Division of Commercial Fisheries, Westward Region
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Introduction:

- Due to the potential for gear or fish contamination to occur during the 1989/90 Kodiak food/bait herring season, all herring harvested must be inspected by DEC personnel and can be processed and sold only for bait and may not be used as a food product.
- This harvest strategy attempts to answer most pertinent pre-season and in-season questions regarding the Kodiak food/bait herring fishery.
- This fishery targets both Kodiak and Kamishak spawning stocks which are present in the Kodiak Area during the food/bait season (8/1 - 2/28).
- Since the herring sac-roë fisheries in the Kodiak and Cook Inlet areas are closed-to-entry fisheries, they are treated as primary fisheries and are managed to provide for the majority of the harvest on the affected stocks to occur in these fisheries. The food/bait fisheries on these same stocks are subsequently treated as secondary fisheries and associated harvest levels are directly related to the results of the sac-roë fisheries on these stocks; food/bait harvest levels generally will not exceed 10% of the sac-roë harvest on any of these stocks. Consequently, consideration is given to the biological concerns associated with "double dipping" fisheries on the same stock and is also given to the 200+ limited entry permit holders for both Kodiak and Cook Inlet sac-roë fisheries whose economic interests in permits could be adversely affected without a specific allocative directive for each fishery.
- Since the commercial sac-roë fisheries in Kodiak and Cook Inlet target on herring with mature roë beginning with age 4 and primarily on age 5 and older herring; individual food/bait landings of age 3 or less will be adjusted to reflect weights of age 5 herring.
- A Board of Fisheries regulatory change in March 1988 resulted in the directive to manage the Kodiak Area food/bait fishery in a manner which considers the aforementioned concerns. Specifically management is guided by the following new regulation:

5 AAC 27.535

- a) The department shall manage the herring food/bait fishery directed on Kodiak spawning stocks so that the food/bait harvest does not exceed 10% of the previous sac-roë season's actual harvest on each stock.
- b) The department shall manage the food/bait herring fishery directed on Kamishak spawning stocks, which over-winter in the Eastern Shelikof Straits, so that the harvest does not exceed 2% (two) of the total available spawning biomass of Kamishak stocks as determined by the department during the most recent sac-roë season.

1. SEASON:

- August 1, 1989 through February 28, 1990.

2. FISHING PERIODS:

- Open to continuous fishing from 12:01 A.M. 8/1/88 to 12:00 P.M. 2/28/89 unless superceded by emergency order closures.

3. CLOSED WATERS:

- See CLOSED WATERS section of the 1989 Commercial Herring Regulation book (page 29).

4. PERMITS REQUIRED (2):

A. Interim Use Permits for legal gear:

- H01K Purse Seine
- H34K Gillnet
- H07K Trawl

B. Registration Permit - Kodiak ADF&G Office

- Permit will be used for:
 - Monitoring fleet size by gear type.
 - Clarifying catch reporting procedures, closed water areas, and in-season emergency order announcement procedures.
- Both permits are available at the Kodiak Fish and Game office.

5. LEGAL GEAR RESTRICTIONS:

- 01 - Purse Seines
 - Maximum length: 100 fathoms
 - Maximum depth: 1,000 meshes (herring web)
 - Leads allowed during food/bait season.
- 34 - Gillnets
 - Maximum length: 150 fathoms; mesh size: 2-1/8" - 2-1/2".
- 07 - Trawl
 - No restrictions
- Consult the 1989 Herring Regulation book for a complete listing of all regulations.

6. HARVEST STRATEGY:

Regulation 5 AAC 27.535(a)(b), as approved by the Alaska Board of Fisheries in March 1988, describes a harvest strategy for the Kodiak Area food/bait fishery which provides for:

- A secondary food/bait harvest, following a primary sac-roë harvest, on both Kodiak spawning stocks and on Kamishak spawning stocks which occur in the Kodiak Management Area during the Kodiak food/bait season (8/1 - 2/28).
- An exclusion of a food/bait harvest on Kodiak stocks in that portion of Shelikof Straits associated with the occurrence of Kamishak stocks as depicted in Fig. 1, except that a harvest on Kodiak stocks may occur in the aforementioned units if the harvest occurs in in-shore areas (bays) prior to a closure of these areas based upon the G.H.L. for Kamishak stocks being achieved.
- An exploratory harvest scenario on unidentified stocks which occur in areas not covered by the two aforementioned provisions.

To accommodate this harvest strategy, thirteen (13) food/bait management units have been established to include geographical groupings of sac-roë stocks and adjacent offshore areas (See Fig. 2).

- For each management unit there is a Guideline Harvest Level (G.H.L.) which reflects the combined G.H.L.'s for Kodiak stocks included within each food/bait unit (See Table 1).
- Six of these food/bait units have also been identified and consolidated into a geographical grouping representing that area where the food/bait harvest on Kamishak stocks will most likely occur (See Fig. 1).

The 1989 food/bait G.H.L. for the Kodiak Area will be affected by the following management considerations:

- For Kodiak spawning stocks, the department will generally limit the food/bait harvest to 10% of the previous spring's sac-roë harvest on a stock by stock basis. Variations to this strategy are depicted in Table 1 with explanations listed in the Table's footnotes. Harvest levels on Kodiak stocks in the adjacent offshore areas will reflect the combined food/bait G.H.L. for the sac-roë stocks included within that management unit. See Table 1 for a listing of G.H.L.'s by stock and by management unit.
- For identified non-Kodiak spawning stocks, the department will control the harvest to insure that a particular stock is not overexploited. At this time, Kamishak Bay spawning stock(s) are the only identified non-Kodiak spawning stock(s) which occur in the Kodiak Management Area during the Kodiak food/bait season (8/1 - 2/28).
 - In the case of Kamishak Bay spawning stock(s) where evidence exists that they are present in Kodiak area waters during the food/bait season, the harvest level will not be allowed to exceed 512 tons. This tonnage is approximately 2% of the 1989 Kamishak Bay pre-sac-roë season total available indexed spawning biomass (sac-roë harvest: 4,801 s.t. plus post-season indexed spawning biomass 20,800 s.t.)

- Management of Kamishak stocks for both the sac-roe and food/bait fisheries is outlined in Table 2.
- During the food/bait fishery, the Department will attempt to identify the location of Kamishak stock(s) in Kodiak Area waters via data collected from the commercial fishery and/or the ADF&G vessel M/V Resolution during its hydroacoustical surveys which target Shelikof Straits herring biomasses; the M/V Coho may also be required to assist in this search.
- All herring samples obtained from either source will be expeditiously worked-up to apply A-W-L comparisons between Kodiak and Kamishak stocks.
- Biomass estimates will be obtained from the fishery in terms of verbal estimation via skipper interviews as to stocks, distribution, average school size, estimated number of schools, etc! Biomass estimates will also be obtained acoustically from the M/V Resolution surveys.
- Herring harvested in this fishery from the following management units will be identified as either Kodiak stocks (per regulation 5 AAC 535(2) or as Kamishak stock(s).
 - These units include F/B 1, F/B 2, F/B 4, F/B 5, F/B 11 and F/B 12 as depicted in Figure 1.
- Herring harvested from the aforementioned food/bait management units, where the harvest occurred in in-shore (bays) locations, will be considered to be Kodiak stocks unless A-W-L and/or biomass data indicates otherwise, in which case they will be considered to be Kamishak stocks.
- If the harvest ceiling of 512 tons on Kamishak stocks is achieved, all of the aforementioned management units would be closed to herring fishing for the remainder of the food/bait season.
- For non identified herring stocks which may occur in off-shore locations in the remaining food and bait management units, the department will control the harvest to insure that a particular stock is not overexploited. Actual harvest levels may be determined by harvest location, biomass observed and age-weight-length information.

7. GUIDELINE HARVEST LEVELS:

- For the 1989/90 food/bait season the following harvest levels will be in effect:
 - For Kodiak spawning stocks: Per regulation 5 AAC 27.535(a) as described under "Harvest Strategy", a maximum of 278.5 tons properly distributed by stock throughout the management area will be the food/bait harvest on Kodiak spawning stocks.
 - See Table 1 for harvest projections by stock.
 - For Kamishak spawning stocks: Per regulation 5 AAC 27.535(b) as described under "Harvest Strategy", a maximum of 512 tons harvested from that portion of Shelikof Straits depicted in Figure 1 (see attached) will be the food/bait harvest ceiling on Kamishak spawning stocks which occur in the Kodiak Area during the food/bait season (8/1 - 2/28).

- Prior to harvesting Kamishak stocks in the aforementioned area, a harvest on Kodiak stocks may occur per regulation 5 AAC 27.535(a).
- Herring harvested in inshore (bays) locations will be considered to be Kodiak stocks unless A-W-L sampling and/or biomass information indicates otherwise, in which case they will be considered to be Kamishak stocks.
- For unidentified stocks: No guideline harvest levels are established, however the remaining 209.5 tons of the regulatory 1,000 ton G.H.L. cited in the 1989 commercial herring regulation book would be expected to occur on these stocks, if justified by stock(s) strength.
- Harvest levels per geographically distinct biomasses will be established in-season per information obtained from A-W-L sampling and from "skipper" interviews detailing estimates of biomass strength, seasonal distribution, school size, etc!

8. REPORTS REQUIRED BY FISHERMEN:

- All landings of herring for food/bait purposes must be verbally reported to ADF&G before the product is totally unloaded at the dock.
- The following phone numbers will reach Fish and Game personnel 24 hours per day:
 - ADF&G Office: Monday through Friday
8:00 A.M. to 4:30 P.M. - 486-4791
 - After Office Hours:
4:30 P.M. to 8:00 A.M. - 486-4251 (Larry Malloy)
- 486-6007 (Dave Prokopowich)

All fish tickets must be completed and sent in to the Kodiak Fish and Game office within a week of the landing.

- Send to: Alaska Department of Fish and Game
211 Mission Road
Kodiak, Alaska 99615

Table 1.

KODIAK MANAGEMENT AREA
1989/90 HERRING FOOD/BAIT HARVEST STRATEGY
A LISTING OF GUIDELINE HARVEST LEVELS BY FOOD/BAIT MANAGEMENT UNITS^{1/}

Food/Bait Mgmt. Units	Sac-Roe Management Units		1989 Sac-Roe		1989/90 Food/Bait
	No.	Name	G.H.L.	Harvest	G.H.L.
F/B 1 West Afognak Unit	A010	Raspberry	35.0	22.0	5.5
	A020	Malina	30.0	44.1	3.0 ^{2/}
	A031	Paramanof	40.0	38.5	4.0 ^{2/}
	A032	Foul Bay	30.0	25.2	3.0
	A040	Blue Fox	20.0	0.0	2.0
	A050	Offshore Afognak	-	0.0	6/
UNIT TOTALS:			175.0	129.8	17.5
F/B 2 North Afognak Unit	A060	Shuyak	20.0	0.0	2.0 ^{4/}
	A070	Perenosa	15.0	0.0	1.5
	A071	Delphin	10.0	0.0	1.0
	A072	Seal Bay	10.0	0.0	1.0 ^{5/}
	A080	Tonki	15.0	0.0	1.5 ^{2/}
UNIT TOTALS:			70.0	0.0	7.0
F/B 3 East Afognak Unit	A090	Izhut	25.0	60.9	2.5
	A091	Kitot	15.0	0.0	1.5
	A092	McDonalds	10.0	10.7	1.0
	A100	Danger	30.0	31.2	3.0
	A101	Litnik	15.0	2.4	1.5
	A102	Inshore Marmot	10.0	2.7	7.3 ^{4/}
UNIT TOTALS:			105.0	107.9	16.8
F/B 4 Uganik Unit	UG10	Kupreanof	10.0	0.0	1.0 ^{4/}
	UG20	Viekoda	30.0	31.3	3.0
	UG21	Terror	80.0	76.6	8.0
	UG30	Village Islands	30.0	35.2	3.0
	UG31	W. Uganik Passage	15.0	20.5	1.5
	UG32	N.E. Arm Uganik	75.0	80.3	7.5
	UG33	E. Arm Uganik	40.0	41.8	4.0
	UG34	S. Arm Uganik	40.0	54.2	4.0
	UG40	Offshore Uganik	-	0.0	6/
UNIT TOTALS:			320.0	339.9	32.0

Table 1. (continued)

Food/Bait Mgmt. Units	Sac-Roe Management Units		1989 Sac-Roe		1989/90 Food/Bait
	No.	Name	G.H.L.	Harvest	G.H.L.
F/B 5 Uyak Unit	UY10	Offshore Uyak	-	0.0	6/
	UY20	Harvester	10.0	0.0	1.0 ^{4/}
	UY30	Inner Uyak	260.0	289.8	26.0
	UY31	Larsen Bay	10.0	4.2	5.8
	UY40	Zachar	100.0	133.5	10.0
	UY50	Spiridon	160.0	100.6	16.0
UNIT TOTALS:			540.0	528.1	58.8
F/B 6 Sturgeon/ Halibut Unit	SH01	Sturgeon/Halibut	Exploration	0.0	Exploration
	UNIT TOTALS:			0.0	-
F/B 7 Alitak Unit	AL10	Outer Alitak	-	0.0	
	AL20	Inner Alitak	Exploration	0.0	Exploration
	AL21	Deadman	125.0	154.3	12.5
	AL30	Sulua	60.0	80.1	6.0
	AL40	Lower Olga/Moser	25.0	5.2	2.5
	AL50	Upper Olga/Moser	190.0	209.4	19.0
	AL60	Geese/Twoheaded	Exploration	7.8	Exploration
UNIT TOTALS:			400.0	456.8	40.0
F/B 8 Eastside Unit	G010	Kaiugnak	10.0	13.3	1.0
	G020	W. Sitkalidak	Exploration	128.6	Exploration
	G021	Barling	15.0	17.3	2.0
	G022	E. Sitkinak	75.0	141.1	9.5
	G023	Tanginak	15.0	29.3	1.5 ^{5/}
	G030	Outer Sitkalidak	Exploration	0.0	-
	G040	Outer Kiliuda	Exploration	0.0	Exploration
	G041	Inner Kiliuda	10.0	5.3	1.0
	G042	Shearwater	15.0	19.8	2.5
	G050	Outer Ugak	Exploration	0	Exploration
	G050	Pasagshak	25.0	29.4	5.0
	G051	Inner Ugak	50.0	54.8	5.0
UNIT TOTALS:			250.0	438.8	27.5

Table 1. (continued)

Food/Bait Mgmt. Units	Sac-Roe Management Units		1989 Sac-Roe		1989/90 Food/Bait
	No.	Name	G.H.L.	Harvest	G.H.L.
F/B 9 Chiniak Unit	G060	Womens Bay	110.0	108.6	11.0
	G100	Kalsin Bay	20.0	5.6	2.0
	G101	Middle Bay	25.0	3.7	2.5
	G102	Inshore Chiniak	10.0	0.0	10.0 ^{4/}
UNIT TOTALS:			165.0	117.9	25.5
F/B 10 North Kodiak Unit	G070	Monashka/Mill Bay	Exploration	0.0	Exploration
	G080	Anton Larsen	30.0	13.5	3.0
	G081	Sheratin	10.0	3.6	6.4
	G090	Kizhuyak	110.0	112.3	11.0
	G103	Spruce Island	10.0	0.0	9.0 ^{4/}
UNIT TOTALS:			160.0	129.4	30.4
F/B 11 North Mainland Unit	M010	North Mainland	Exploration	0.0	Exploration
	M020	Inner Kukak	50.0	0.0	5.0
	M030	Outer Kukak	-	0.0	Exploration
	M040	Missak	Exploration	0.0	Exploration
UNIT TOTALS:			50.0	0.0	5.0
F/B 12 Mid-Mainland Unit	M050	Inner Katmai	50.0	0.0	5.0
	M060	Outer Katmai	-	0.0	Exploration
	M070	Alinchak	30.0	0.0	3.0
	M080	Puale Bay	Exploration	0.0	Exploration
	M090	Portage Bay	Exploration	0.0	Exploration
UNIT TOTALS:			80.0	0.0	8.0
F/B 13 South Mainland Unit	M100	Outer Portage	-	0.0	Exploration
	M110	Wide Bay	100.0	0.0	10.0 ^{5/}
	M120	Lower Shelikof	-	0.0	Exploration
UNIT TOTALS:			100.0	0.0	10.0
GRAND TOTALS:			2,415.0	2,248.6	278.5

*See footnotes on next page.

FOOTNOTES:

- 1/ The Kodiak Area total G.H.L. for food/bait, as indicated in the 1989 Herring Regulation book is 1,000 s.t. However, as indicated under the regulatory harvest strategy, these stocks exploited during the sac-roë season are managed to retain approximately 10% of the available harvest for the food/bait fishery. This table reflects the available food/bait harvest for each sac-roë stock or food/bait unit, whichever applies. (See Harvest Strategy.)
- 2/ Sac-roë management units where excessive sac-roë harvests may have occurred either this year or in the past and where a reduced food/bait harvest is justified.
- 3/ Sac-roë management units where the sac-roë harvest substantially exceeded pre-season expectations probably as a result of increased stock abundance rather than overharvest and where an increased food/bait harvest commensurate with the increased sac-roë fishery is justified.
- 4/ Sac-roë management units where a sac-roë underharvest may have occurred and where an increased food/bait harvest is justified. In some cases where the stock status is in question the increased food/bait harvest may still be less than pre-season expectations on those stocks.
- 5/ Sac-roë management units where the sac-roë harvest was substantially less than pre-season expectations probably as a result of an overestimation of stock strength and where a reduced food/bait harvest is justified.
- 6/ See attached plan for management of the Kamishak Bay Herring Spawning Stocks in the Shelikof Straits Food and Bait Fishery.

Table 2.

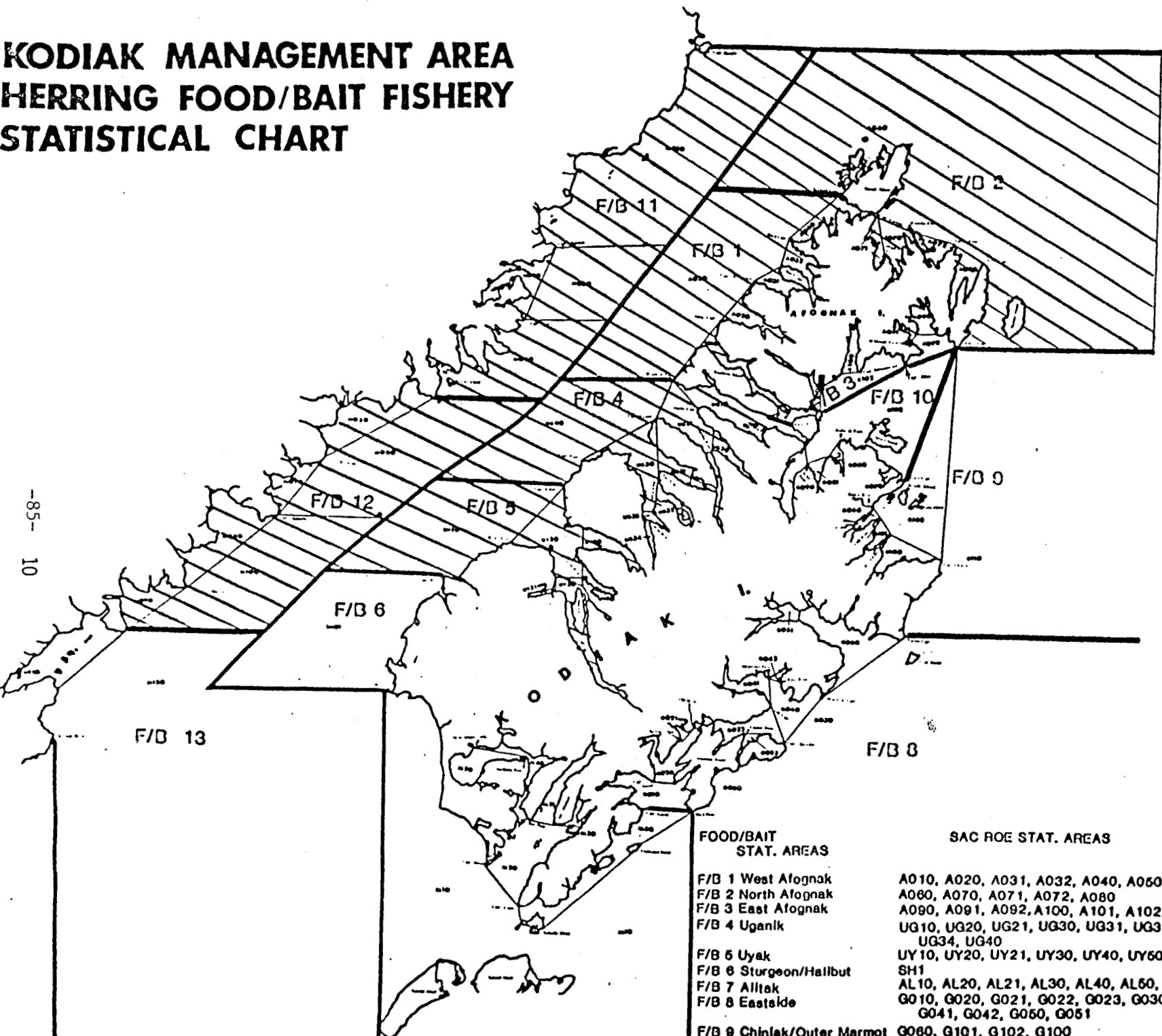
MANAGEMENT OF THE KAMISHAK BAY HERRING SPAWNING STOCKS
IN THE SHELIKOF STRAIT
FOOD AND BAIT FISHERY

Addendum to the 1988 Kamishak Bay
Herring Management Plan

Kamishak Bay herring spawning stocks support both the Kamishak Bay sac-roe fishery and the Shelikof Strait food and bait fishery. Pursuant to the Board of Fisheries decision to allocate 2% of the Kamishak Bay herring spawning biomass to the Shelikof Strait food and bait fishery, the following adjustments will be made to the 1988 Kamishak Bay sac-roe fishery management plan to accommodate the Board's actions and to protect the Kamishak Bay herring stock from over harvest:

- 1) ADF&G guidelines direct that herring harvest rates be kept at or below 20% of the current best estimate of biomass, depending upon stock strength and age composition. Best estimates of biomass of the Kamishak Bay herring stock are currently determined by aerial survey following the spring sac-roe fishery. Therefore, harvest levels in the Shelikof Strait food and bait fishery will be based on this estimate of spawning biomass.
- 2) The harvest ceiling for the Shelikof Strait food and bait fishery will be 2% of the best estimate of the total Kamishak biomass, as determined by the Department during the most recent Kamishak herring sac-roe season. The total Kamishak Bay biomass will be determined by the best estimate of the spawning biomass following the sac-roe fishery plus the total harvest from the sac-roe fishery.
- 3) Present management strategy for the Kamishak Bay spawning stocks attempts to achieve a maximum harvest rate on older fish of 20% while keeping the harvest rate of fish age 5 and younger at or below 10%.
- 4) If ADF&G determines the harvest rate for the stock of Kamishak Bay herring should be less than 20%, either due to a decrease in biomass, weak year classes, or poor recruitment, the 2% food and bait harvest ceiling will be reduced proportionally. [i.e. If the biological markers (decrease in biomass, weak year classes, or poor recruitment) indicate that the sac-roe harvest needs to be reduced, for example to 15%, the food and bait fishery would be reduced to 1.5%]
- 5) If the spawning biomass of the Kamishak Bay herring stocks falls below the biological threshold level of 8,000 tons, both the Kamishak Bay sac-roe and the Shelikof Strait food and bait fishery will be closed or severely limited.

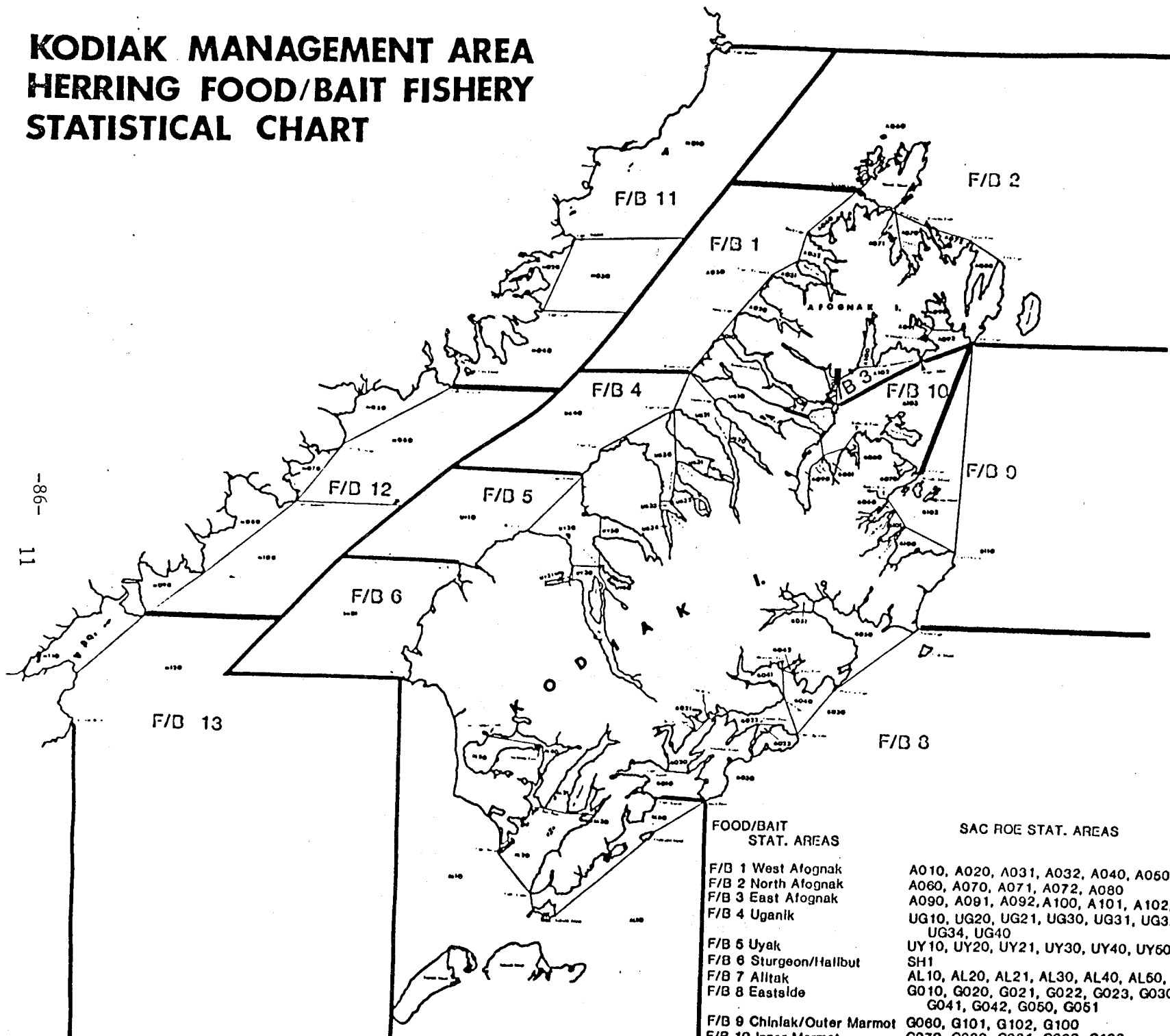
KODIAK MANAGEMENT AREA HERRING FOOD/BAIT FISHERY STATISTICAL CHART



FOOD/BAIT STAT. AREAS	SAC ROE STAT. AREAS
F/B 1 West Afognak	A010, A020, A031, A032, A040, A060
F/B 2 North Afognak	A060, A070, A071, A072, A080
F/B 3 East Afognak	A090, A091, A092, A100, A101, A102,
F/B 4 Uganik	UG10, UG20, UG21, UG30, UG31, UG32, UG33,
	UG34, UG40
F/B 5 Uyak	UY10, UY20, UY21, UY30, UY40, UY60
F/B 6 Sturgeon/Hallbut	SH1
F/B 7 Allak	AL10, AL20, AL21, AL30, AL40, AL50, AL60
F/B 8 Eastside	G010, G020, G021, G022, G023, G030, G040,
	G041, G042, G050, G051
F/B 9 Chinik/Outer Marmot	G060, G101, G102, G100

Fig. 1.

KODIAK MANAGEMENT AREA HERRING FOOD/BAIT FISHERY STATISTICAL CHART



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